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ABSTRACT

This mini-research project examined middle school students' participation in and identification with school as a social unit. The study used a student survey to explore: (1) middle schoolers' perceptions of their family educational culture, instructional quality in their school, and their ability/academic self-efficacy; (2) their patterns of responding to school requirements and their patterns of participation in class-related initiatives, extracurricular activities, and school governance activities; and (3) their identification with their school. Differences between sixth-, seventh-, and eighth-graders on these dimensions were also examined, as were relationships between their participation and perceptions. Findings revealed that sixth-graders are more engaged with their school than either seventh- or eighth-graders, and that perception of the quality of instruction is the strongest predictor of identification with school. (Appendices include the student survey, survey administration protocol, and statistical portraits. Contains 10 references.) (EV)

MIDDLE SCHOOL STUDENTS' PARTICIPATION IN AND IDENTIFICATION WITH SCHOOL

A Mini-Research Project
Recipient of the Virginia Educational Research Association 1999 Charles Edgar Clear Research Award

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MIDDLE SCHOOL STUDENTS' PARTICIPATION IN AND IDENTIFICATION WITH SCHOOL

A Mini-Research Project

Introduction

Purpose of the Study

The purpose of this study is to describe middle school students' participation in and identification with school as a social unit. Because the middle school years are a time of change and transition from the small, self-contained world of childhood to the wider social world of adolescence, they can be a time of alienation, as well. Any tendency to withdraw from participating in the school's academic or social activities during the middle school years could be viewed as an indicator of potential trouble ahead, particularly for the at-risk students. Therefore, it is vitally important that educators identify adolescents' patterns of participation in school -- both academically and socially -- so that appropriate steps can be taken to break the cycle of disengagement and potential failure.

Background

As the Virginia Middle School Association (VMSA) (1995) reported that "[t]he purposes and functions of exemplary middle schools center on the intellectual, social emotional, moral, and physical developmental needs of young adolescents" (p. 7). During the brief period known as adolescence, young people change rapidly -- physically, morally, cognitively -- and they face numerous social pressures, including sex, drugs, and violence. Also during this period of their lives, adolescents must develop a personal identity or self-concept, become socially adept and autonomous, plus develop their own character and value system. For middle schools to achieve their purpose in serving the developmental needs of adolescents, they must offer programs specifically aimed at those needs (VMSA, 1995).

Middle schools that have been recognized as "exemplary" possess certain common characteristic instructional and organizational features. According to VMSA (1995), these are:

(1) Interdisciplinary teaming, where one group of students is assigned to a team of core content area teachers. This scheduling arrangement enables to teachers to plan cooperatively, integrate

their lessons across content areas, and together provide consistent support for the students. For students, this provides a consistent team of caring adults with which to interact on a daily basis. In addition, this arrangement enables to school to utilize heterogeneous groupings of students, thereby fostering positive social interactions among them.

(2) Advisory programs, where staff members meet with small groups of students at regularly-scheduled times during the week to discuss issues that are important to the students. In some schools, every adult staff member may work with students in this manner in an effort to increase the students' sense of significance and belonging, to build their self-confidence, and to develop trusting relations between and among the students and adults in the school.

(3) Varied instruction, where teachers take into account the students' individual interests and needs in planning instruction, integrate real-life issues into the curriculum, and provide ample opportunities for the students to think, question, and engage in problem-solving activities in order to promote a caring and concern for others, sensitivity to the needs of others, and a devotion to democratic values.

(4) Exploratory programs, where students are given the opportunity to experience a variety of courses and subject matter -- from the academic to the vocational and recreational. In some schools, students may select from a combination of these "high-interest" "short courses" in order to obtain elective credits in the fine arts (music, drama, art), technology (drafting, woodworking, programming), sports, health, and physical education, international languages (French, Spanish, Italian, Greek), and community service activities. These programs are designed to capture the students' interest while providing them a sense of the academic and career opportunities open to them.

(5) Transition programs, where students receive support in making a smooth transition from the self-contained world of their elementary school into the larger world of the middle school. In some school districts, elementary school students visit the middle school they will attend, receive a tour of the building, and observe first-hand "middle school life." In other districts, special summer "induction"

programs are provided, where the students meet in smaller groups with their teachers and have an opportunity to find their way around the building before school starts.

The implementation of Virginia's current Standards of Accreditation (SOAs), however, threatens to dismantle many of the recognized key components of exemplary middle schools. The SOAs require that a total of 140 hours of instruction be met in each core subject in an 180-day school year at the middle school level (Regulations Establishing Standards for Accrediting Public Schools in Virginia, 1997). To insure that a student is actively participating in the 140 hours of instruction, many middle schools have gone to an alternative scheduling technique and have done away with teaming. The time allocated for teacher advisory periods has been reassigned to instructional time to insure this 140 hours, and exploratory programs have been reduced or done away with all together.

Further threatening organizational structure of the middle school are the newly developed and implemented Standards of Learning (SOLs) tests. In response to the push to "score high," student participation in extra-curricular activities and student/teacher relationships have been de-emphasized. Instead, the focus has shifted almost totally to academics, with no effort made to achieve an harmonious balance between academics and the developmental needs of the adolescent. Presently, requiring 70 percent of eighth graders pass all four core subject and technology SOL tests for the school to be accredited (Regulations Establishing Standards for Accrediting Public Schools in Virginia, 1997) has become the sole purpose of middle schools across the state.

Significance of the Study

This study investigates the degree to which adolescent students feel a part of their middle school and show whether or not they participate in school activities. The results will provide administrators and policy makers with an indication of these students' future school continuation potential.

The results of this study will also be used to develop a School Improvement Plan currently being written by the staff of the middle school in which the study was conducted. The school is presently working on obtaining an accreditation status by the National Elementary and Middle School

Accreditation Association. This will add an important piece of the documentation required in the Plan.

Research Questions

Three research questions were developed to guide the design and implementation of the study. These were:

1. What are middle school students':
    a. perceptions of their family educational culture?
    b. perceptions of the quality of instruction in their school?
    c. perceptions of their ability/academic self-efficacy?
    d. patterns of responding to school requirements?
    e. patterns of participation in class-related initiatives?
    f. patterns of participation in extracurricular activities?
    g. patterns of participation in school governance activities?
    h. identification with their school?
2. What differences, if any, exist between sixth-, seventh-, and eighth-grade students' perceptions of their family educational culture, perceptions of the quality of instruction in their school, perceptions of their ability/academic self-efficacy, patterns of responding to school requirements, participation in class-related initiatives, participation in extracurricular activities, participation in school governance activities, and identification with their school?
3. What relationships, if any, exist between middle school students' participation in school activities (responding to requirements, participating in class-related initiatives, participation in extracurricular activities, participation in school governance activities), perceptions of their family educational culture, perceptions of the quality of instruction in their school, perceptions of their ability/academic self-efficacy, and identification with their school?

Review of Literature

The literature that supports this study of student participation and identification as a factor in success in school centers around the work of Jeremy Finn (1989, 1983; Finn & Cox, 1992), as it relates to the transformational leadership for school restructuring espoused by Kenneth Leithwood and Robert Aitken (1995). One of the outcomes in the district monitoring system advocated by Leithwood and Aitken (1995) is student participation in and identification with the school as a social unit. The following reasons are given for the importance of this outcome: (1) Changes in the students' participation and identification is a reliable indicator of problems that provide clues for district and school improvement (Lloyd, 1978). (2) Many students drop out of school after a long process of gradual disengagement and reduced participation in the curriculum and social life of the school. (3) Student participation and identification is a reliable predictor of student outcomes, such as achievement in math and language (Finn & Cox, 1992). (4) Changes in student participation and identification might be brought about fairly quickly through restructuring initiatives (Leithwood & Aitken, 1995).

Finn's (1989) participation-identification model relates classroom participation in the early grades to continued participation over the years, which, along with a degree of academic success, results in internalizing a sense of identification with school. Several additional longitudinal studies support Finn's (1989) research. In a study of over 1500 third-grade students of whom 21 percent did not graduate from school, Lloyd (1978) found that there was already a distinction in third grade between dropouts and graduates in course grades, grade retentions, and standardized achievement scores.

In a study of the relationship between participatory behavior in the classroom and past school achievement for fourth grade students, highly significant differences were found in the achievement levels between students who participate actively and show initiative toward learning activities, those who do very little beyond responding to teacher directives, and those who do not actively participate and may demonstrate oppositional behavior (Finn & Cox, 1992). An example of a school that focuses on student participation is Middle College High School in New York, a school that was designed to meet the needs

of at-risk students. There is an emphasis on forming a sense of belonging and on academic engagement through collaborative learning. The high school students, teachers, administrators, and professors from LaGuardia Community College where the school is located, all communicate and interact (Cullen, 1991).

In a study of resilient at-risk students, McMillan & Reed (1993) found that at-risk students, those in danger of dropping out of school, are less likely than other students to become involved in extracurricular events without a personal invitation from a teacher or administrator. Most resilient at-risk students, however, attempt to become involved in classroom discussion and activities. In addition, these students become involved in at least one extracurricular event. Most of the students in the study (McMillan & Reed, 1993) seemed to like school, believed that extracurricular activities were very important, and were involved in clubs, church activities, hobbies, and sports. The extra support and encouragement that these at-risk students needed was provided through involvement in these activities.

Other studies that support the importance of student participation and identification in school success include an ethnographic study by Kramer (1990) of students from a multi-cultural inner city school which found, among other things, that: at-risk students had become more alienated from school by seventh grade than their more successful peers and that relationships with teachers were significantly more negative for at-risk students than for successful students. In a study by Finn (1993) that examined the proposition that students who are not active participants in class or school may be at risk of school failure, regardless of status characteristics, a positive relationship was found between participation and academic achievement.

Design and Method

Research Design

In order to answer the research questions, two non-experimental designs were selected for this study. The first, a descriptive, cross-sectional design, was appropriate because the major purpose of this study was to describe middle school students' perceptions of their family educational culture,

perceptions of the quality of instruction in their school, perceptions of their ability/academic self-efficacy, their patterns of responding to school requirements, their patterns of participation in class-related initiatives, their patterns of participation in extracurricular activities, their patterns of participation in school governance activities, and their identification with their school; and to describe the differences in perceptions for current sixth, seventh, and eighth graders. The researchers felt that this design would enable them to answer the first two research questions

A second purpose of the study was to describe relationships between middle school students' participation in school activities and perceptions of the quality of instruction in their school, perceptions of their family educational culture, perceptions of their ability/academic self-efficacy, and identification with their school. In order to accomplish this purpose (Research Question 3), a correlational research design was selected.

Variables

The independent variables for the first research question were grade level, which was defined as sixth, seventh, or eighth grade during the 1998-99 school year. The dependent variables were family educational culture, defined as discussing school work with parents, students, and teachers at school, having access to study aids at home, and parental willingness to help with school work, provide space at home to study and work on projects, and ensure that the student has a healthy diet/enough sleep; quality of instruction, defined as teachers' use of a variety of instructional techniques, student access to books and resource materials, students' perceptions of the future usefulness of their schoolwork, and teachers' willingness to provide extra help and attention, if needed; ability/academic self-efficacy, defined as students' understanding of material presented in class, their confidence in their ability to succeed at school, their belief in their learning, and their intention to graduate from high school; identification with school, defined as enjoying school, being proud of school, having a feeling of "belonging" at school through friendships with other students and positive in- and out-of-class relationships with teachers at school; and participation in school.

There were four levels of "participation in school," which were defined as follows:

Level 1, Response to school requirements – behaviors that could best be described informally as "being there," i.e., being present and on time for school and class, finishing school work on time, being attentive in class, not skipping classes, misbehaving, having detention, or being suspended.

Level 2, Participation in class-related initiatives – class participation behaviors, including asking questions and giving opinions in class, engaging teachers in discussions about interesting content or materials, putting energy into assignments, doing extra work in areas of interest, reading outside of school.

Level 3, Participation in extracurricular activities – includes spectator and participation in sports, plays, musical performances; attending dances; participating in special school events; belonging to school clubs and organizations; and spending time on club and organizational activities.

Level 4, Participation in school governance activities – participation in decision-making at school, including decisions about what and how to study, defining school rules, and personal goal-setting.

For the correlational study, quality of instruction, ability/academic self-efficacy, and the "participation" variables were the independent variables. Identification with school was the dependent variable.

Population and Sampling Procedures

The population for this study was the entire student body of a small, public, rural middle school located in the southeastern section of an eastern-seaboard state. This is the only middle school in the district, and therefore serves all of the sixth, seventh, and eighth grade students in the jurisdiction. In September 1998, there were 245 students in membership.

For two reasons, the researchers chose to use the entire population of the middle school in this study. First, it was intended that the results of the study be used to develop the School Improvement

Plan for the middle school as well as to meet the requirements for the course in quantitative research methodology. Secondly, the small size of the student body made sampling impractical.

Measurement Instrument

The Student Participation and Engagement Survey, developed by Leithwood and Aitken (1995) was used as the measure of student participation in and identification with school (Appendix A). This 79-item, Likert-scale survey was the result of extensive research into factors (variables) associated with the constructs of student participation and engagement and led to the classification of the items on the survey into the following five subscales: family educational culture, quality of instruction, ability/academic self-efficacy, participation, and identification with school. Evidence of the reliability of scores on the subscales was obtained from Chronbach's Coefficient Alpha. As reported in Making Schools Smarter (Leithwood & Aitken, 1995, p. 129), the obtained reliability coefficients were as follows: family educational culture (Alpha = .78), quality of instruction (Alpha = .84), ability/academic self-efficacy (Alpha = .73), participation (Alpha = .55), identification with school (Alpha = .86).

In designing the instrument, Leithwood and Aitken (1995) sought "[t]o minimize systematic response bias, [therefore,] items measuring different aspects of the [subscale variables were placed so as not to be] obvious from the instrument itself" (p. 129). For the purpose of this study, the following subscales and their component items were used:

1. Family Educational Culture – Items 37, 48, 51, 52, 60, 65, 68, 71, 73, 74.
2. Quality of Instruction – Items 39, 43-47, 49, 50, 53, 54, 59, 62, 63.
3. Ability/Academic Self-Efficacy – Items 75-78.
4. Participation

    Level 1 (Response to School Requirements): Items 4, 7, 8, 11, 14, 17, 20, 21-26

    Level 2 (Participation in Class-Related Initiatives): Items 1, 2, 6, 10, 13, 15

    Level 3 (Participation in Extracurricular Activities): Items 18, 19, 27-34

    Level 4 (Participation in School Governance Activities): Items 3, 5, 9, 12, 16

5. Identification With School – Items 35, 36, 38, 40, 41, 42, 55-58, 61, 64, 66, 67, 69, 70, 72.

Items composing the subscales on the instrument were rated on four- or five-point scales. Response values for all items except Level 3 of the "participation" subscale ranged from "1" (strongly agree) to "4" (strongly disagree). Response values for the items composing Level 3 of the "participation" subscale (Participation in Extracurricular Activities) ranged from "1" (always) to "5" (never). For scoring purposes, these values were reversed so that the "positive" responses ("strongly agree" or "always") received the highest value ("4" or "5"), respectively.

Administration and Scoring Procedures

Three language arts teachers were chosen to administer the survey. In order to ensure uniformity, one of the researchers trained the teachers in how to administer the survey, following the administration protocol developed for this purpose (Appendix B).

The survey was administered over a three day period. On the first day, 91 eighth graders were given the survey. On the second day, 61 sixth graders were given the survey, and on the third day, 70 seventh graders were given the survey. Each of the teachers read the survey aloud to the students.

The students marked their responses on general purpose National Computer Systems (NCS®) answer sheets. One of the researchers wrote a scan program, scanned the sheets, and recorded the scanned data onto a diskette. The Statistical Package for the Social Sciences (SPSS®) was used to analyze the survey data.

Every student received a score for each of the four subscales on the instrument. In order to prevent subscale scores from being negatively affected by "Not Applicable" responses, these subscale scores were obtained by averaging the response values for each of the items making up the subscale.

Data Analyses

Because the intent of the descriptive, cross-sectional study was to describe differences existing in the present between the perceptions of sixth, seventh, and eighth graders on each of the dependent variables, descriptive statistics (frequency tabulations and means for each group's scores on the

subscales for each of the dependent variables) were computed. These were displayed graphically using histograms. Inferential statistics, using one-way analysis of variance (ANOVA), were computed to determine whether the observed differences in perceptions between sixth, seventh, and eighth graders were statistically significant. In order to make inferences about which means differed (and how great the differences were), simultaneous 95% confidence intervals, using Bonferroni multiple comparison techniques, were constructed for each of the dependent variable means across the three grade levels of the independent variable.

For the correlational analysis, Pearson product-moment correlation coefficients were computed between the dependent variable (identification with school) and the independent variables. Graphic representations of these bivariate correlations were produced in scatter plots. To investigate further the form of the relationship between the independent and dependent variables, a linear regression analysis was used.

Each type of analysis was selected because of its appropriateness for the design of the study and for answering the research questions posed at the beginning of the study.

Results

Descriptives

The mean scores for the subscales of the Student Participation and Engagement Survey, including the four variables associated with participation in school, are shown for 222 of the 245 students (for whom there was no missing data) and by grade level in Table 1, which may be found on the next page. As the data in this table show, students in the total group:

- Agreed that they were responsive to requirements (mean=3.39, standard deviation=.32).
- Were closer to agreeing than not that they participated in class-related initiatives (mean=2.73, standard deviation=.55).
- Sometimes participated in extracurricular activities (mean=2.89, standard deviation=.79).

- Were closer to agreeing than not that they participated in school governance activities (mean=2.67, standard deviation=.63).

Table 1

Middle School Students' Mean Subscale Scores on the Student Participation and Engagement Survey, by Grade Level

	All Grades (n = 222)		Grade 6 (n = 61)		Grade 7 (n = 70)		Grade 8 (n = 91)	
Subscales	M	SD	M	SD	M	SD	M	SD
Family Educational Culture	3.12	.55	3.40	.41	3.13	.47	2.93	.61
Ability/Academic Efficacy	3.44	.52	3.69	.30	3.50	.45	3.21	.60
Quality of Instruction	3.17	.49	3.26	.40	3.33	.40	3.00	.56
Participation (All Levels)	3.03	.38	3.11	.34	3.15	.32	2.89	.41
1-Response to Requirements	3.39	.32	3.45	.28	3.43	.30	3.32	.35
2-Class-Related Initiatives	2.73	.55	2.87	.51	2.71	.55	2.65	.58
3-Extra-Curricular Activities	2.89	.79	2.74	.86	3.23	.66	2.73	.78
4-School Governance	2.67	.63	3.04	.57	2.74	.52	2.36	.61
Identification with School	3.07	.52	3.27	.37	3.13	.44	2.90	.60

For the other three variables that are believed to affect student performance in school, students responding to the survey as a group agreed that they received quality instruction (mean=3.17, standard deviation=.49); were about midway between agreeing and highly agreeing that they possessed ability or academic self-efficacy (mean=3.44, standard deviation=.52); and agreed that they identified with school (mean=3.07, standard deviation=.52).

Sixth graders had the highest mean scores (toward the "agree" end of the response rating) and lowest standard deviations of the three grade levels on the family educational culture, ability/academic efficacy, response to requirements, class-related initiatives, school governance, and identification with school variables. As shown by a visual examination of the histograms and box plots for the same subscales found in Appendix C, the distributions of scores for sixth graders on these subscales resembled the normal curve. As the histograms and box plots show, average scores for seventh and eighth graders

were skewed toward the low end of the scale due to the presence of outliers, especially for response to requirements (7 and 8), class-related initiatives (8), quality of instruction (8), ability/academic efficacy (7), and identification with school (7 and 8).

Average ratings for quality of instruction were remarkably similar across all three grade levels (mean=3.26, 3.33, and 3.00 for sixth, seventh, and eighth graders, respectively). This observation can be confirmed by a visual examination of the histograms in Appendix C. Also apparent from the histograms is that the distribution of seventh grade scores is rather flat, and the distribution of eighth grade scores is quite spread out, affected by the presence of outliers at the low end of the scale.

On the extracurricular activities subscale, sixth and eighth graders had the lowest average scores (mean=2.74 and 2.73, respectively), indicating an almost overall lack of participation in this aspect of school life. As the histograms in Appendix C show, however, and the standard deviations in Table 1 confirm (SD=.86 and .78, respectively), there was quite a bit of variability in sixth and eighth graders' participation levels.

It should be noted that eighth graders had the lowest average scores on all of the subscales, with the school governance subscale having lowest average score (mean=2.36). This was surprising, given that these students were beginning their third year at the school and by this time should be "in on" the most important activities of the school.

ANOVA and Post Hoc Comparisons Across Grade Levels

When the observed differences between the responses of sixth, seventh, and eighth grade students to the variables associated with participation were statistically tested, the results (shown in Appendix D) were:

- A significant difference was found between the students in the different grade levels in their response to requirements. One-way ANOVA results indicated an F-statistic of 4.28, which was significant at the .015 level.

- No significant difference was found between the students in the different grade levels in their participation in class-related activities. One-way ANOVA results indicated an F-statistic of 3.01 which was not significant (p=.052).
- A significant difference was found between the students in the different grade levels in their participation in extracurricular activities. One-way ANOVA results indicated an F-statistic of 10.01 which was significant at the .000 level.
- A significant difference was found between the students in the different grade levels in their participation in school governance activities. One-way ANOVA results indicated an F-statistic of 26.04, which was significant at the .000 level.

Comparisons of student responses on the three different grade levels to the other variables that were identified in the literature as possible factors in success in school revealed the following results: For all three variables—quality of instruction, ability or academic self-efficacy, and identification with school—a significance difference at the .000 level was found between the sixth, seventh, and eighth grade respondents. F-statistics were 11.35 for quality of instruction, 18.19 for ability or academic self-efficacy, and 11.07 for identification with school.

An examination of the 95 percent Bonferroni confidence intervals (Appendix D) reveals the following between-group comparisons of means:

- Family Educational Culture (sixth grade was higher than seventh and eighth, respectively).
- Quality of Instruction (eighth grade was lower than sixth and seventh, respectively).
- Ability/Academic Efficacy (eighth grade was lower than sixth and seventh, respectively).
- Extracurricular Activities (seventh grade was higher than sixth and eighth, respectively).
- School Governance (sixth grade was higher than seventh and eighth, respectively).
- Identification with School (eighth grade was lower than sixth and seventh, respectively).

This provides significant evidence that there was a true difference between the group means for those subscale scores and support for the conclusion that sixth graders responded positively on the majority of

those variables associated with participation and identification with school, while eighth graders exhibited low engagement with their school.

Relationships Among the Variables

Relationships among the variables are displayed visually in scatter plots (Appendix E) and in tabular form in the correlation and regression tables (Appendix F). A visual examination of the scatter plots in Appendix E reveals a positive association between the independent variables and identification with school.

When the four variables associated with participation in school were correlated with the identification with school variable, a high positive correlation (.61) was found with school governance; moderately high positive correlations were found with response to requirements (.41), and with class-related initiatives (.41); and a low positive correlation was found with extracurricular activities (.27). Other independent variables having high positive correlations with identification with school were quality of instruction (.80), ability/academic efficacy (.74), and family educational culture (.61). All of these correlations were significant beyond the .000 level, as shown in the correlation table in Appendix F.

The results of the regression analysis of the form of the relationship between the independent variables and identification with school are displayed in Appendix F. As indicated by the value of r^2, middle school students' perceptions of the quality of instruction, ability/academic efficacy, and school governance explain about 72 percent of the variability of identification with school. The model for expressing the relation between identification with school and these three predictors considered together is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Identification with School = -.03 + (0.53) Quality of Instruction + (0.31) Ability/Academic Self-Efficacy + (0.12) School Governance

According to this model, all other things being equal, each additional factor in perception of quality of instruction will result in a corresponding 0.53 increase in students' identifying with their school; each additional factor in ability/academic self-efficacy will result in a corresponding 0.31 increase in identifying with school; and each additional factor in perception of school governance will result in a corresponding 0.12 increase in identifying with school. The *t* values of 9.92, 6.11, and 3.12 for quality of instruction, ability/academic self-efficacy, and school governance, respectively, and the graphical display in the partial residual plots (Appendix F) indicate that perception of quality of instruction is clearly the strongest predictor of identification with school, with school governance being more marginal.

Implications and Recommendations

The results of this study indicated that sixth graders were more engaged with their school than either the seventh or eighth graders and that perception of the quality of instruction in the school is the strongest predictor of identification with school. If the findings reported in the literature regarding the relationship between participation/identification with school and subsequent success and continuation in school are accepted, the findings of this study have serious implications for the middle school's school improvement planning.

First, it would be important to capture the incoming sixth graders while their energy, enthusiasm, and tendency to participate in school is high and continue this emphasis throughout their middle school years. Every effort should be made to strengthen the academic program through teachers' use of varied instructional techniques, provision of a wide range of instructional and resource materials, emphasis on connections between school work and real life, and teachers' willingness to spend extra time helping students. As a way of encouraging student participation at school, it would be important to ensure that there are knowledgeable, committed, caring adults to engage students in discussions, both in and out of the classroom, and to provide opportunities for the students to get to know other students and their teachers well. Secondly, the school should start early to ensure that there are many opportunities, not only for sixth graders, but for all students, to become involved in activities of an academic, social, or

athletic nature with their peers and with their teachers, as part of the total school program. Finally, to increase a sense of "belonging," it is critical that students be given opportunities to make choices and decisions about their schooling, from deciding how best to study, to making choices about learning activities and deciding, with caring adult guidance, on school and classroom rules and codes of behavior.

Limitations

Statistical conclusions reached in this study were valid because the researchers took steps to minimize threats to the inferences drawn. To guard against low statistical power, the researchers sampled the entire population (100 percent) of middle school students. The researchers avoided the error rate problem by using Bonferroni multiple comparison techniques. To control for unreliability in data collection, the researchers selected a well-researched survey instrument whose subscale reliabilities ranged from .55 to .86, and reported group means. Although the study was not an experimental one, the researchers sought to control random irrelevancies in the research setting by administering the survey in classrooms by teachers who knew the students and providing training to ensure standardization across administration settings.

There were, however, several threats which potentially could have jeopardized the internal validity of this study and which the researchers were unable to control. These were:

- History/extraneous events, because the study was conducted over a three school-day period that included a weekend.
- Subject effects, especially social desirability and efforts to please the examiners (the teachers).

Researchers avoided the testing threat by using an instrument in which the items measuring different aspects of each of the variables under study were not grouped together, but rather dispersed throughout the instrument. The selection bias was avoided by including the entire middle school population in the sample.

Possible threats to construct validity included data gathering by a single survey administration (mono-method bias) and subjects' possible apprehension about the assessment situation. The researchers attempted to ease the students' apprehension by having the purpose explained as part of the administration procedures and providing opportunities for questions to be answered/unfamiliar terms explained.

The final potential threat to the validity of this study's findings is one which the researchers deliberately chose not to control. No attempt was made to generalize the results beyond the population for which they were intended or beyond the present time. Therefore, findings are limited to the current students of a small, public, rural middle school in the southeastern section of an eastern-seaboard state. The results may be used, as intended, for the school improvement planning process and may also provide baseline data for a longitudinal study of student participation and engagement.

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Appendix A

STUDENT PARTICIPATION AND ENGAGEMENT SURVEY

(Leithwood & Aitken, 1995) Adapted and Reproduced with Permission

The purpose of this survey is to obtain information about you and how you feel about school. The information will be used in an effort to improve education for students. Therefore, please read the instructions carefully and answer each question as honestly as possible. You will be able to complete this survey in about 20 minutes. Your response to the questionnaire will be anonymous.

General Instructions for Using the Answer Sheet

Using a #2 pencil only, mark all of your responses on the green "General Purpose NCS Answer Sheet." DO NOT complete the "NAME" grid.

Background Information

Gender. Darken the **M** (male) or **F** (female) in the **"SEX"** grid on the top center of the green sheet.

Grade Level. Darken the numbered bubble in the **"GRADE OR EDUC"** grid on the center of the green sheet which corresponds to your current grade level.

Ethnicity (Race). Write the code number for your ethnicity (race) in the boxes under column **P** in the **"SPECIAL CODES"** grid on the center of the green sheet. Then darken the appropriate numbered bubble in the column below the box. Use one of the following codes:

1 = Native American
2 = Asian
3 = Black
4 = Hispanic
5 = White
8 = Other

Survey Directions

Darken the numbered response bubble on the green answer sheet that best expresses your opinion about each question. If the question is not applicable or you don't know the answer, darken the bubble 8 on you answer sheet.

Part 1: Participation in School Activities	*Strongly Agree*	*Agree*	*Disagree*	*Strongly Disagree*	*NA*
1. I put a lot of energy into my schoolwork.	1	2	3	4	8
2. I enjoy giving my opinion during class discussions.	1	2	3	4	8
3. Making my own decisions about what to study helps make my schoolwork worthwhile.	1	2	3	4	8
4. I rarely daydream in my classes(es).	1	2	3	4	8

Continued on next page

	Strongly Agree	Agree	Disagree	Strongly Disagree	NA
5. In my classes, students help decide what we will do for projects and assignments.	1	2	3	4	8
6. I frequently ask questions during class.	1	2	3	4	8
7. I rarely am late for school.	1	2	3	4	8
8. I always finish my schoolwork on time.	1	2	3	4	8
9. As a student, I have helped to decide what the rules will be for our school.	1	2	3	4	8
10. I frequently have discussions with my teachers about things that I find interesting.	1	2	3	4	8
11. I do all the homework that I am expected to do.	1	2	3	4	8
12. Our school's discipline rules are fair to students.	1	2	3	4	8
13. I frequently do extra schoolwork to find out more about something that interests me.	1	2	3	4	8
14. I respond whenever I am asked questions during class.	1	2	3	4	8
15. I do a lot of extra reading for my own benefit.	1	2	3	4	8
16. My teachers encourage me to set my own goals for what I want to get out of school.	1	2	3	4	8
17. I rarely skip class without permission.	1	2	3	4	8
18. Participating in school events (e.g., games, dances, plays) is a very important part of my life at school.	1	2	3	4	8
19. I have been a very active member of school clubs and/or sports teams throughout secondary school.	1	2	3	4	8

Continued on next page

20. On an average night during the week, I spend the following amount of time doing homework:

1 = None
2 = Less than 30 minutes
3 = 30-60 minutes
4 = 1-2 hours
5 = More than 2 hours

For items 21-26, choose the range—representing the number of days—that best describes your situation:

	0-times	*1-5 times*	*4-10 times*	*More than 10 times*
21. Since school started, I have been late for school	1	2	3	4
22. Since school started, I skipped a class (without permission)	1	2	3	4
23. Since school started, I have been absent for a whole day	1	2	3	4
24. Since school started, I have been sent to the office because of misbehavior	1	2	3	4
25. Since school started, I had a detention	1	2	3	4
26. Since school started, I have been suspended	1	2	3	4

Part 2: Participation in Extracurricular Activities

I participate in school activities in the following ways:	*Always*	*Frequently*	*Sometimes*	*Rarely*	*Never*	*NA*
27. As a spectator at sports events	1	2	3	4	5	8
28. By participating at sports events	1	2	3	4	5	8
29. As a spectator at other school events (e.g., plays, musicals)	1	2	3	4	5	8
30. By participating in our school events (e.g., plays musicals)	1	2	3	4	5	8
31. By attending school dances	1	2	3	4	5	8
32. By participating in 1-day special events (e.g., Multicultural Day, dress-up days)	1	2	3	4	5	8

Continued on next page

33. Indicate how many school organizations (e.g., sports teams, clubs-library, newspaper) you are a member of this school year.

1 = 0 (none)
2 = 1
3 = 2-3
4 = 4-5
5 = 6+

34. On average, how much time per week do you spend participating in those school organizations of which you are a member?

1 = 0 (none)
2 = 1 hour
3 = 2-4 hours
4 = 5-8 hours
5 = 9+

Part 3: View on Education	Strongly Agree	Agree	Disagree	Strongly Disagree	NA
35. The most important things that happen to me usually happen at school.	1	2	3	4	8
36. I think schoolwork is really important.	1	2	3	4	8
37. My parents/guardians make sure I do my homework before having free time.	1	2	3	4	8
38. It is really important to me that I gain knowledge and develop skills through my schoolwork.	1	2	3	4	8
39. I like the way teachers teach in most of my classes.	1	2	3	4	8
40. I am proud of my school.	1	2	3	4	8
41. I really enjoy school most of the time.	1	2	3	4	8
42. All people should get as much education as they can.	1	2	3	4	8
43. My school gives me access to books and equipment that I need.	1	2	3	4	8
44. I am constantly challenged in class.	1	2	3	4	8
45. My schoolwork is helping me prepare for life after I finish school.	1	2	3	4	8

Continued on next page

	Strongly Agree	Agree	Disagree	Strongly Disagree	NA
46. Most of my teachers relate schoolwork to my future life.	1	2	3	4	8
47. My teachers use a variety of activities in my classes.	1	2	3	4	8
48. My parents/guardians encourage me to participate in extracurricular activities and events.	1	2	3	4	8
49. We have the right number of quizzes, tests, and exams in my courses.	1	2	3	4	8
50. The things I learn in school are useful in my life outside school.	1	2	3	4	8
51. My parents/guardians always know whether or not I am at school.	1	2	3	4	8
52. My parents/guardians usually go to parents' nights and special school events.	1	2	3	4	8

Part 4: Views on Atmosphere for learning

53. Most of my classes are well organized.	1	2	3	4	8
54. Most of my teachers go out of their to help students.	1	2	3	4	8
55. School spirit is very high in my school.	1	2	3	4	8
56. I feel that I "belong" at this school.	1	2	3	4	8
57. Most of my teachers are interested in me as a person.	1	2	3	4	8
58. I have made many friends in my school.	1	2	3	4	8
59. My teachers frequently discuss my work with me.	1	2	3	4	8
60. I often discuss my schoolwork with my parents/guardians.	1	2	3	4	8
61. Most of my teachers treat me the same as other students.	1	2	3	4	8
62. Most of my teachers are willing to spend extra time with me.	1	2	3	4	8
63. Most of my teachers expect me always to do my best work.	1	2	3	4	8

Continued on next page

	Strongly Agree	Agree	Disagree	Strongly Disagree	NA
64. Most of my teachers make me feel comfortable in class.	1	2	3	4	8
65. Study aids at home (e.g., books, an encyclopedia, magazines, computer) help me do better schoolwork.	1	2	3	4	8
66. I have come to know other students in our school really well.	1	2	3	4	8
67. I get along with most of other students I have met in my school	1	2	3	4	8
68. My parents/guardians always are willing to help me with my schoolwork.	1	2	3	4	8
69. My teachers spend time just talking with me.	1	2	3	4	8
70. Most of my teachers seem to understand me.	1	2	3	4	8
71. I often have conversations about major world events with my parents/guardians.	1	2	3	4	8
72. I get along with most of my teachers.	1	2	3	4	8
73. I have my own work space at home that is fairly quiet for doing homework and school projects.	1	2	3	4	8
74. My parents/guardians ensure that I have a healthy diet and enough sleep.	1	2	3	4	8

Part 5: View on My Schoolwork

75. I am able to understand most of the material covered in my classes.	1	2	3	4	8
76. I feel confident that I will be successful in school.	1	2	3	4	8
77. I am learning a lot at school.	1	2	3	4	8
78. I will graduate from high school	1	2	3	4	8
79. I am satisfied with my grades.	1	2	3	4	8

Source: Leithwood, K. & Aitken, R. (1995). Making Schools Smarter: A System for Monitoring School and District Progress. Thousand Oaks, CA: Corwin Press. Adapted and reproduced with permission.

Appendix B

Survey Administration Protocol

To The Teacher: The purpose of this survey is to obtain information about the students and how they feel about school. The information will be used as part of the school planning process. To ensure standardization and validity, please use the following guidelines when administering the survey to your students:

1. Explain the purpose of the survey (you may read from the purpose that is printed at the top of the survey) and tell the students that they will receive a survey form and an answer sheet on which to mark their answers.

2. Explain that the students are not to put their names on any of the papers and assure them that all of their answers will be kept confidential.

3. Distribute the surveys, answer sheets, and No. 2 pencils to the students.

4. Read over the purpose and general instructions for using the answer sheet while the students follow along, then read the survey directions to the students.

5. Read each question aloud to the students, giving them time to mark their answers. Emphasize that they should be honest in choosing their answers and careful in marking their responses.

6. If students have difficulty understanding the meaning of certain words on the survey, you may provide them with definitions, but be careful not to indicate how you think they should respond.

7. When the students have finished, collect the survey forms and answer sheets and return them to your principal.

8. Thank the students for their help with this project.

Thank you for your assistance.

Appendix C

SPSS® Printout of Descriptives, Histograms, and Box Plots

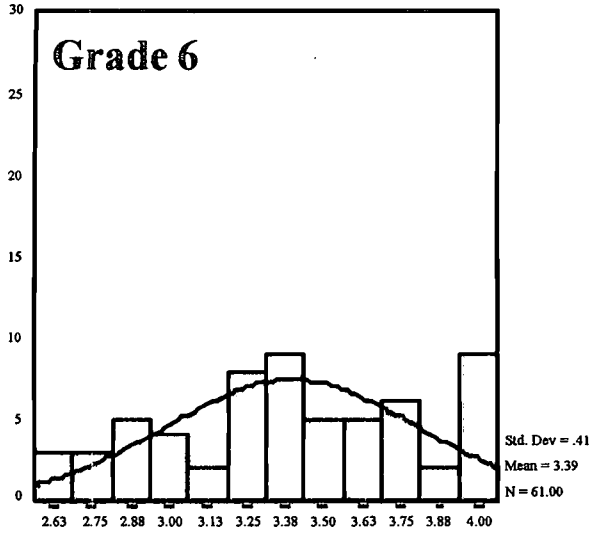
Descriptives

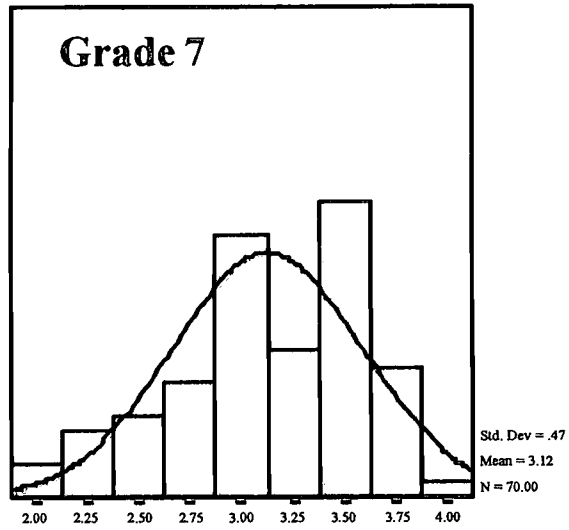
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Family Educational Culture	Grade 6	61	3.395	.411	.053	3.289	3.500	2.6	4.0
	Grade 7	70	3.125	.467	.056	3.013	3.236	2.0	3.9
	Grade 8	91	2.932	.607	.064	2.805	3.058	1.4	4.0
	Total	222	3.120	.547	.037	3.047	3.192	1.4	4.0
Quality of Instruction	Grade 6	61	3.261	.399	.051	3.159	3.363	2.2	4.0
	Grade 7	70	3.328	.404	.048	3.232	3.425	2.5	4.0
	Grade 8	91	2.995	.557	.058	2.879	3.111	1.2	4.0
	Total	222	3.173	.493	.033	3.108	3.238	1.2	4.0
Ability/Academic Self-Efficacy	Grade 6	61	3.689	.302	.039	3.611	3.766	3.0	4.0
	Grade 7	70	3.496	.453	.054	3.388	3.605	1.8	4.0
	Grade 8	89	3.213	.599	.064	3.086	3.339	1.5	4.0
	Total	220	3.435	.523	.035	3.365	3.504	1.5	4.0
Response to Requirements	Grade 6	61	3.451	.277	.036	3.380	3.522	2.8	3.9
	Grade 7	70	3.434	.304	.036	3.362	3.507	2.6	3.9
	Grade 8	91	3.316	.351	.037	3.243	3.389	1.8	4.0
	Total	222	3.391	.322	.022	3.348	3.433	1.8	4.0
Class-Related Initiatives	Grade 6	61	2,870	,513	.066	2.739	3.001	1,7	4,0
	Grade 7	70	2,713	,545	.065	2.583	2.843	1,7	4,0
	Grade 8	91	2,649	,575	.060	2.529	2.769	1,0	3,8
	Total	222	2,730	,554	.037	2.657	2.803	1,0	4,0
Extracurricular Activities	Grade 6	61	2.742	.855	.110	2.523	2.961	1.3	4.8
	Grade 7	70	3.230	.656	.078	3.074	3.386	1.6	4.8
	Grade 8	91	2.733	.775	.081	2.572	2.894	1.0	4.2
	Total	222	2.892	.794	.053	2.787	2.997	1.0	4.8
School Governance	Grade 6	61	3.035	.571	.073	2.888	3.181	1.7	4.0
	Grade 7	70	2.740	.519	.062	2.616	2.864	1.8	3.8
	Grade 8	91	2.363	.610	.064	2.236	2.490	1.0	3.6
	Total	222	2.666	.633	.043	2.583	2.750	1.0	4.0
Identification with School	Grade 6	61	3.268	.374	.048	3.172	3.364	2.3	4.0
	Grade 7	70	3.130	.440	.053	3.025	3.235	1.6	3.9
	Grade 8	91	2.895	.597	.063	2.770	3.019	1.4	3.9
	Total	222	3.072	.518	.035	3.003	3.140	1.4	4.0

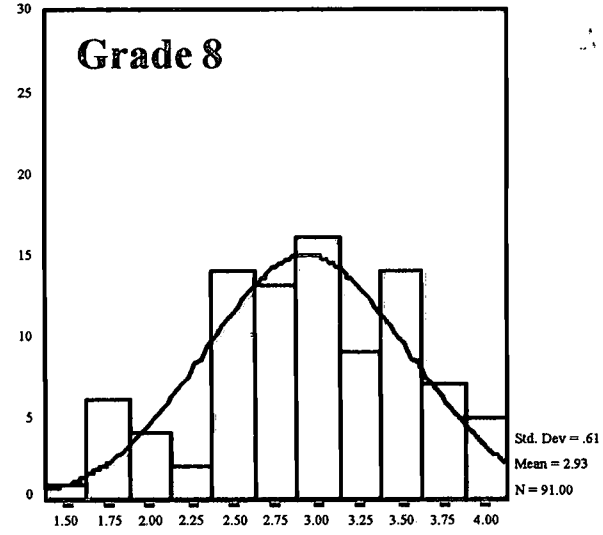
Descriptive Statistics

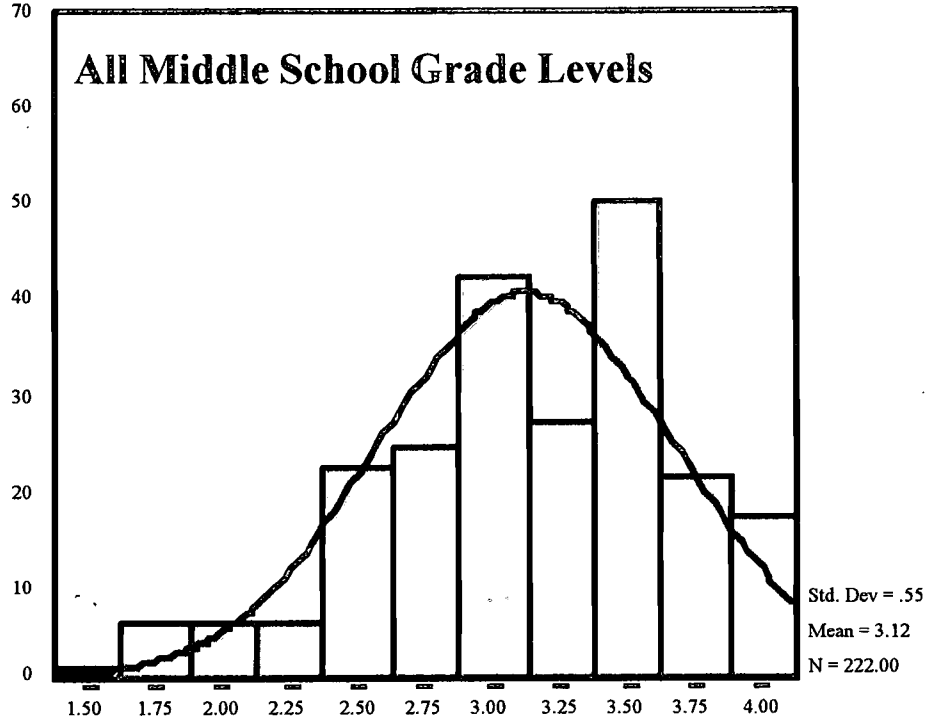
	N	Range	Minimum	Maximum	Mean	Std.	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Family Educational Culture	222	2.6	1.4	4.0	3.120	.547	-.589	.163
Ability/Academic Self-Efficacy	220	2.5	1.5	4.0	3.435	.523	-1.123	.164
Quality of Instruction	222	2.8	1.2	4.0	3.173	.493	-.813	.163
Participation - All Levels	222	2.3	1.6	3.9	3.031	.382	-.202	.163
Response to Requirements	222	2.2	1.8	4.0	3.391	.322	-.823	.163
Class-Related Initiatives	222	3,0	1,0	4,0	2,730	,554	-.094	.163
Extracurricular Activities	222	3.8	1.0	4.8	2.892	.794	.047	.163
School Governance	222	3.0	1.0	4.0	2.666	.633	-.077	.163
Identification with School	222	2.6	1.4	4.0	3.072	.518	-.790	.163
Valid N (listwise)	220							

Family Educational Culture









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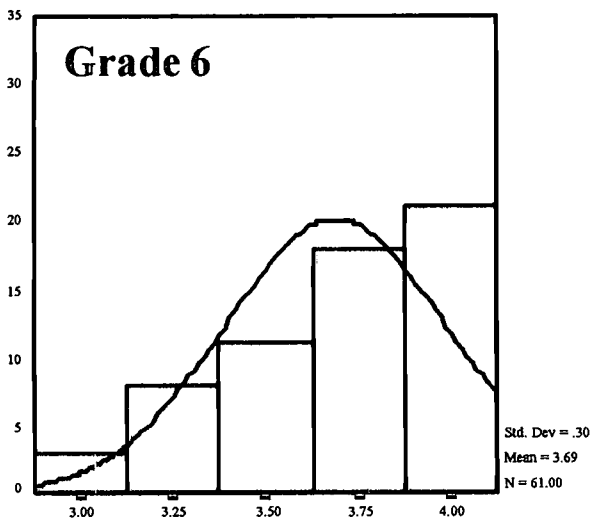

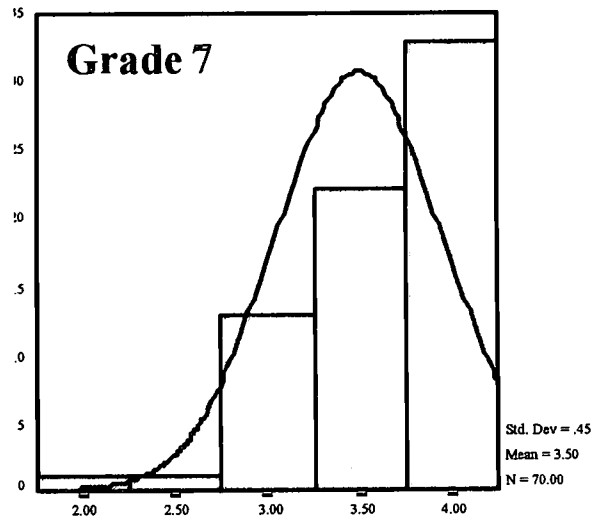

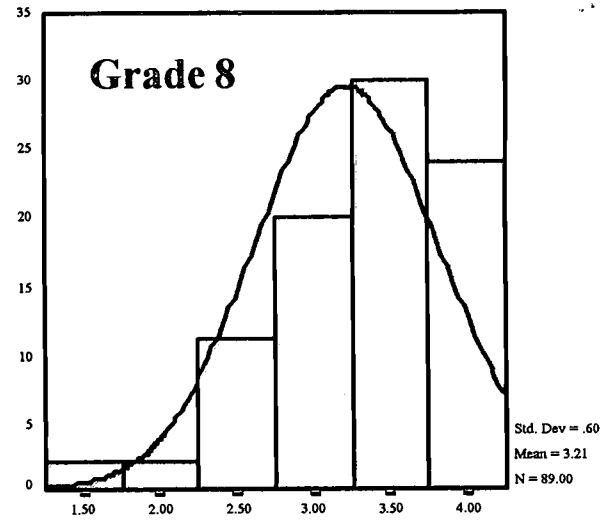

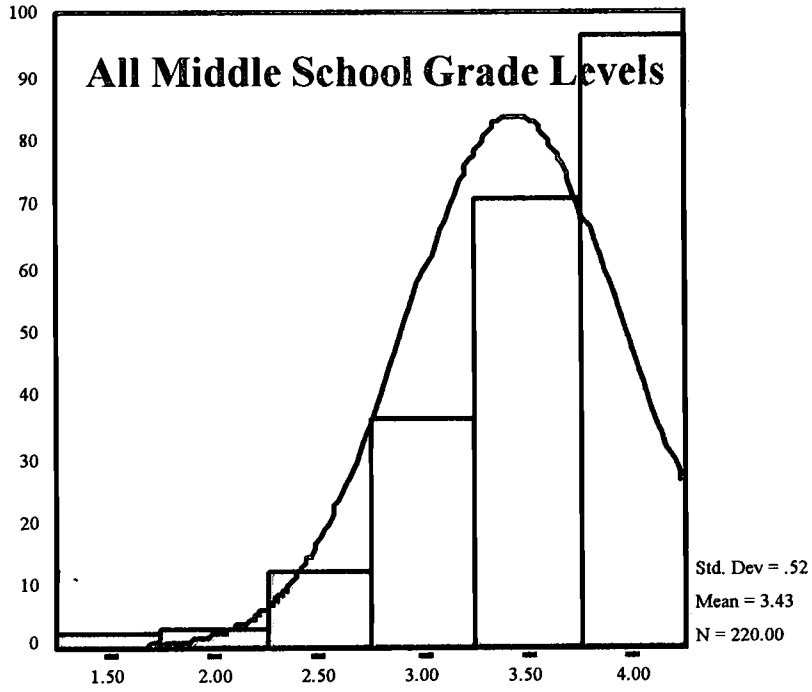

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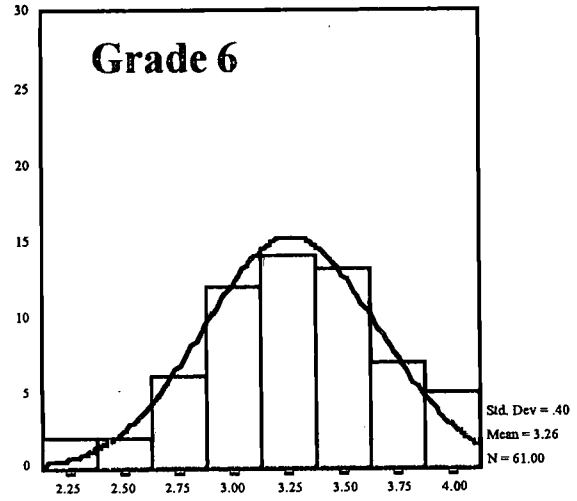
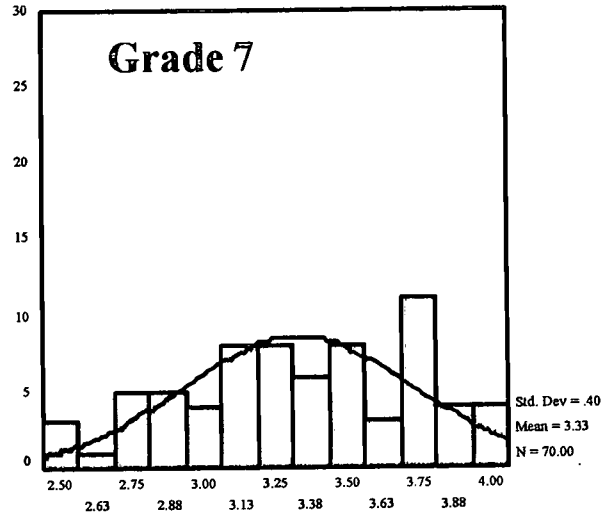
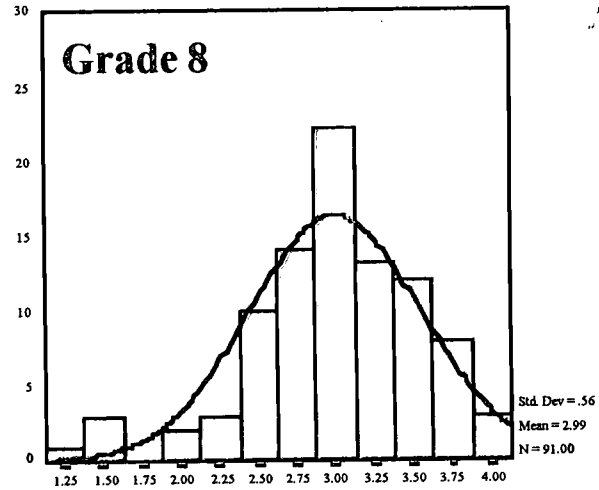
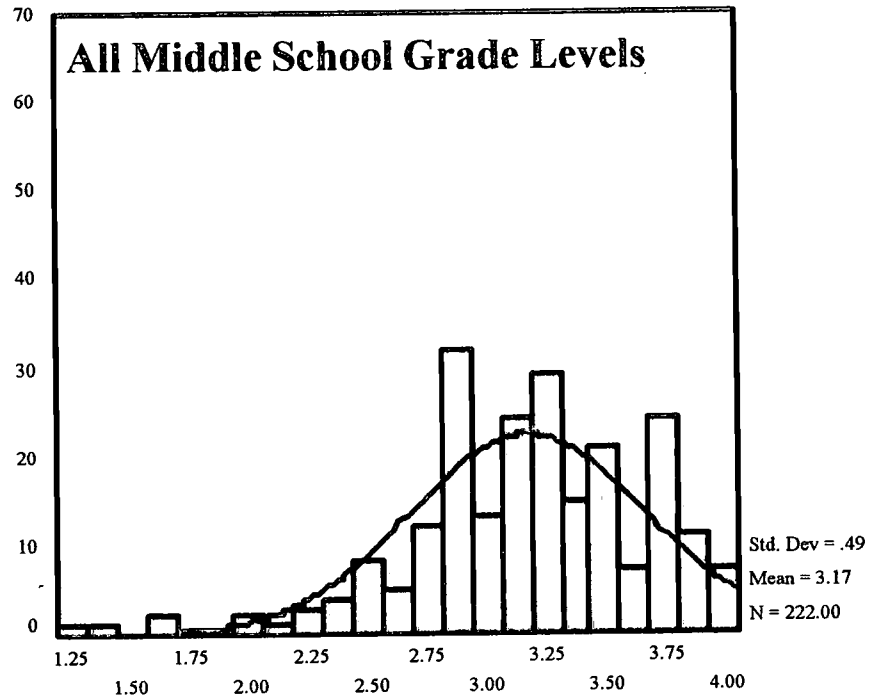
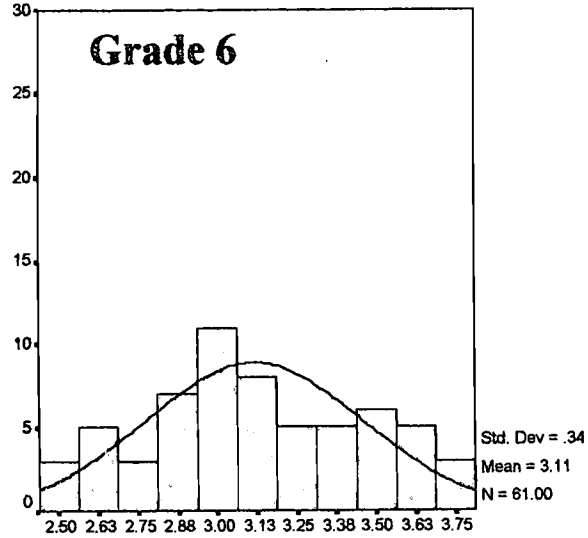


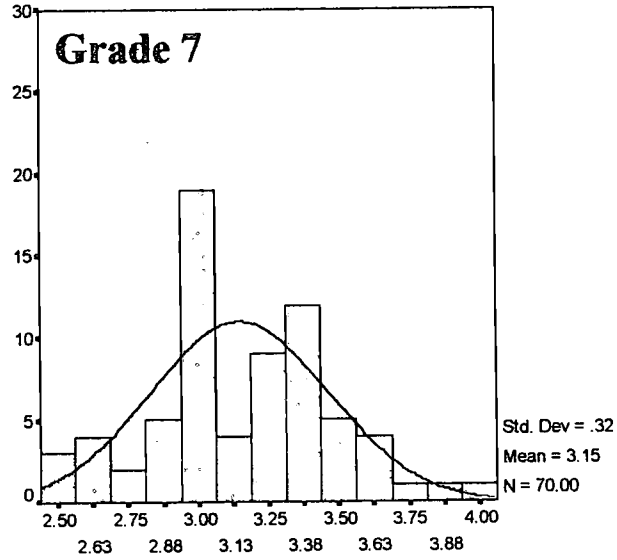


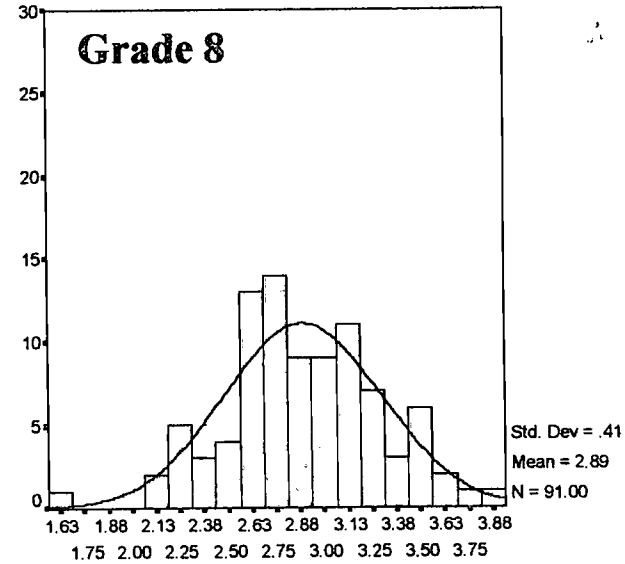


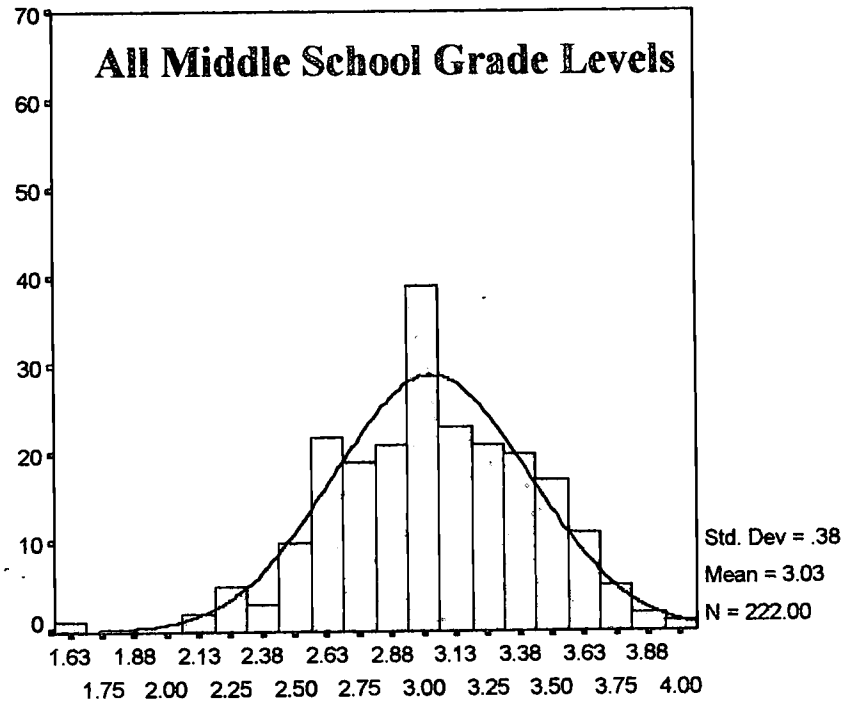


Participation - All Levels









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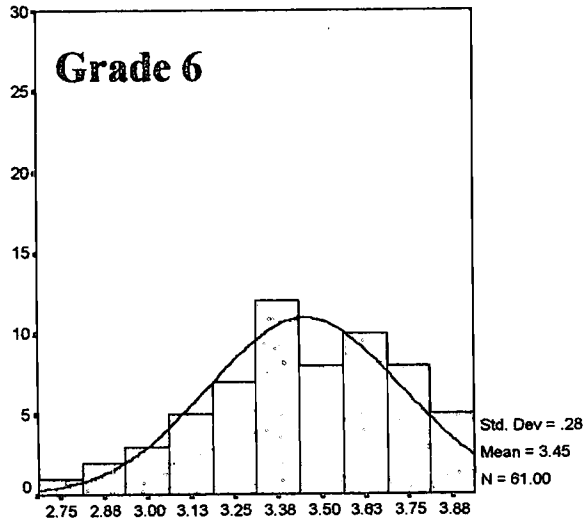
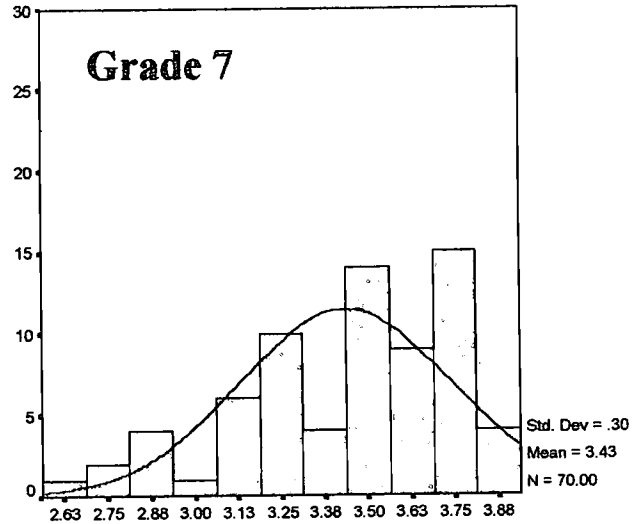
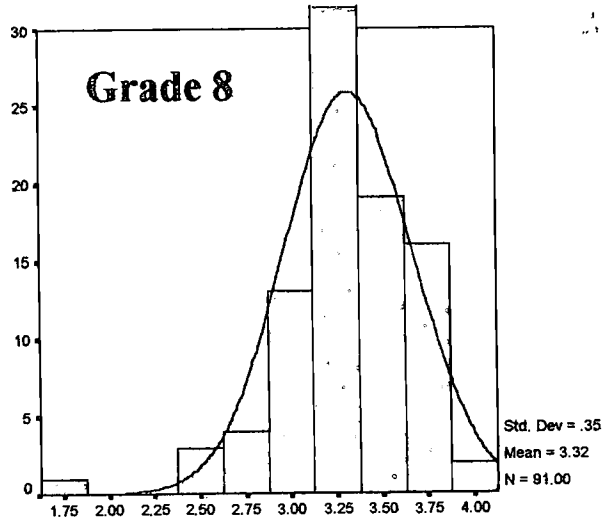
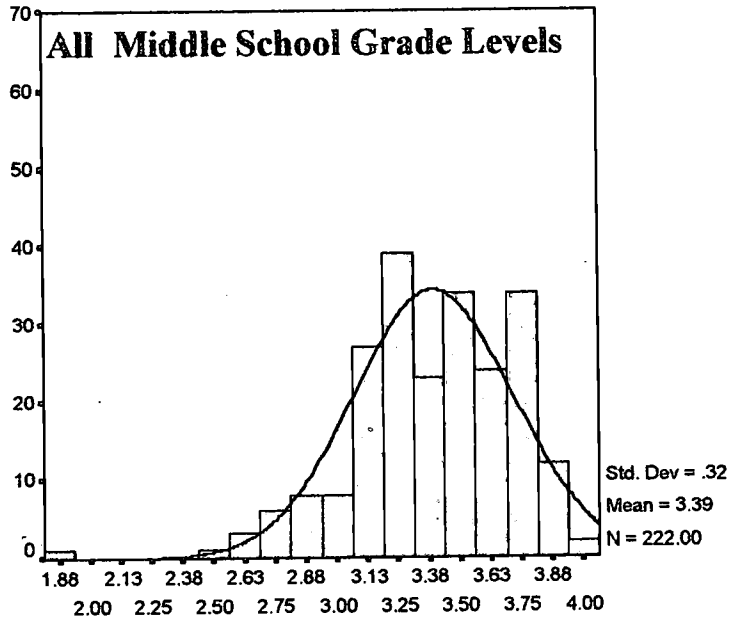
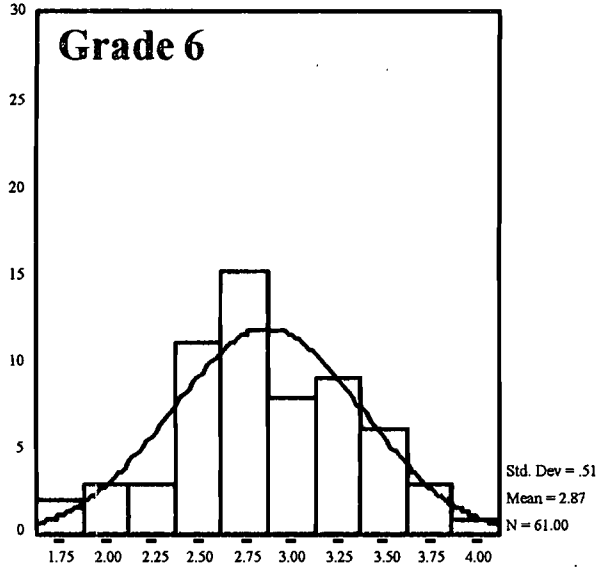


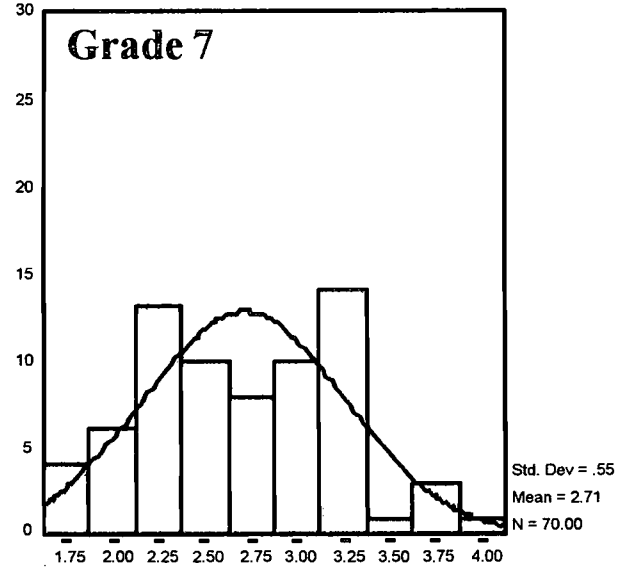


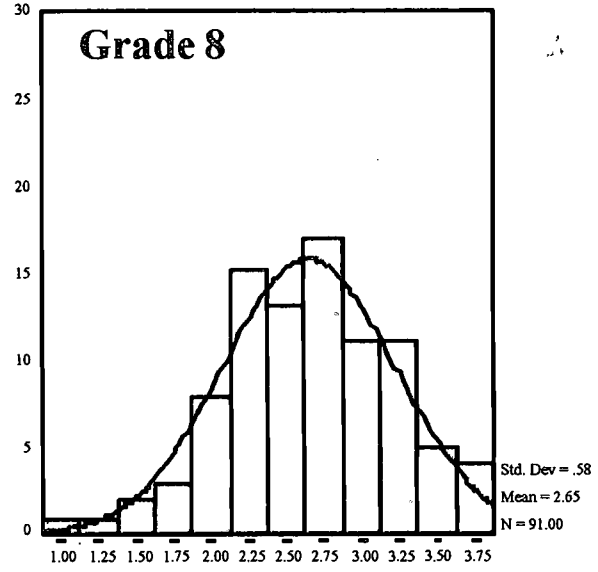


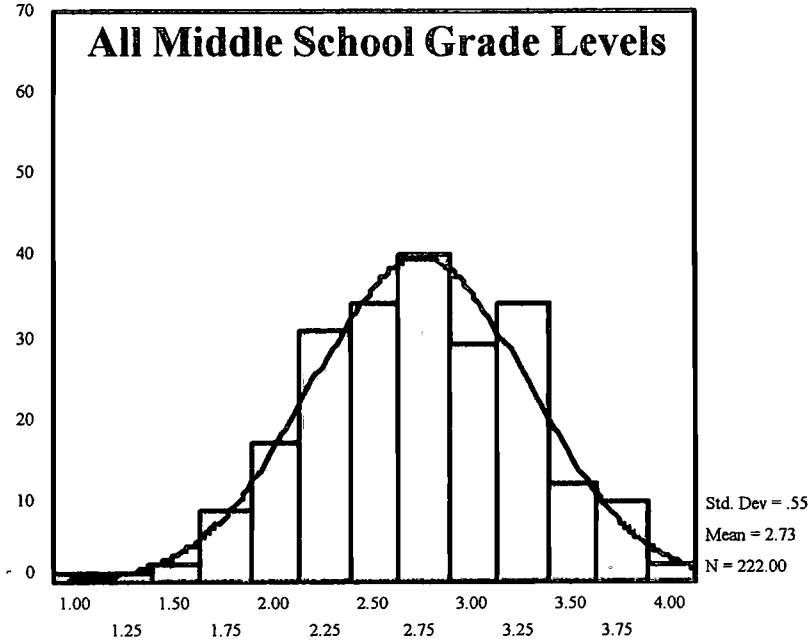


Level 2 Participation - Class-Related Initiatives

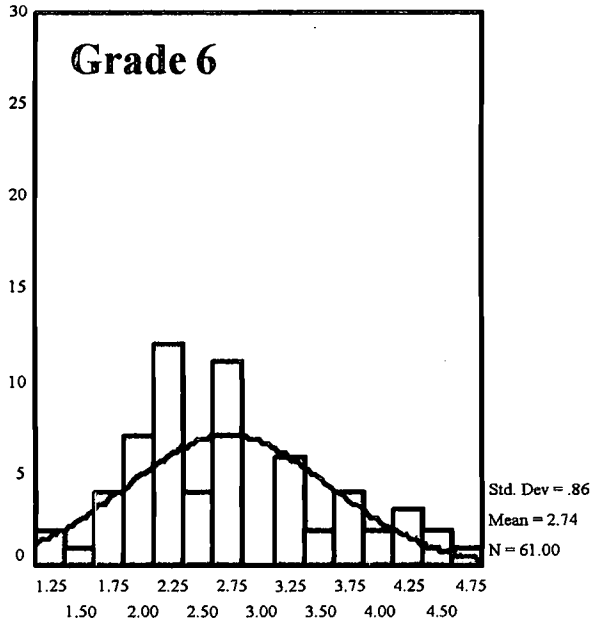


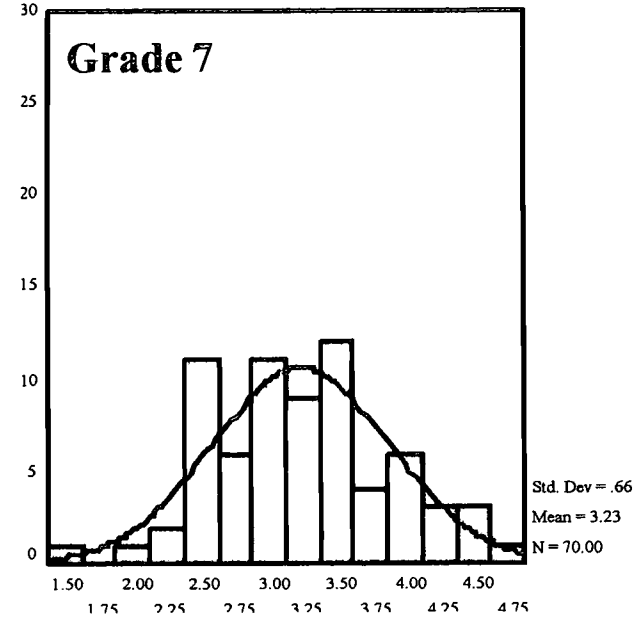


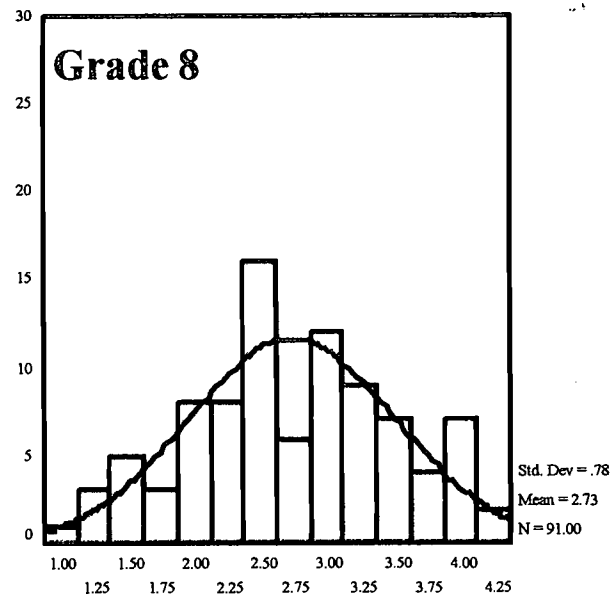


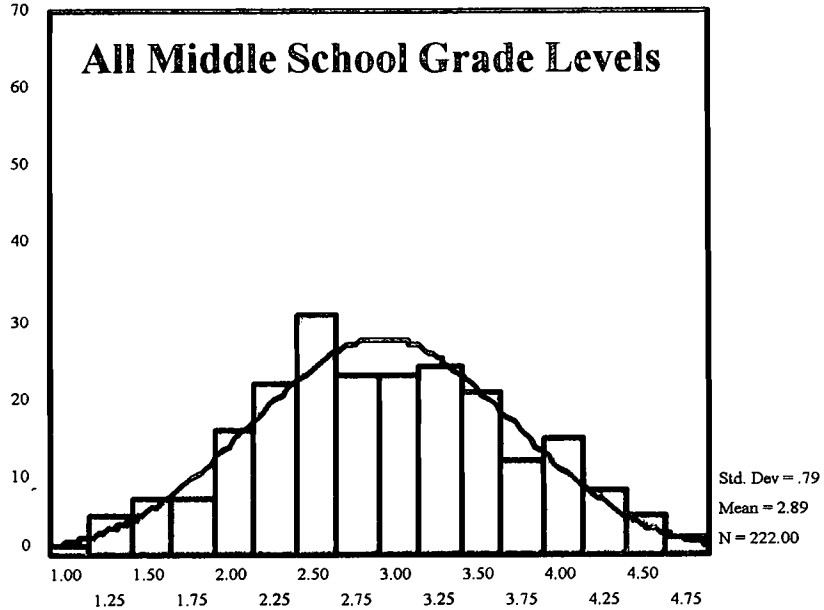


Level 3 Participation - Extra-Curricular Activities

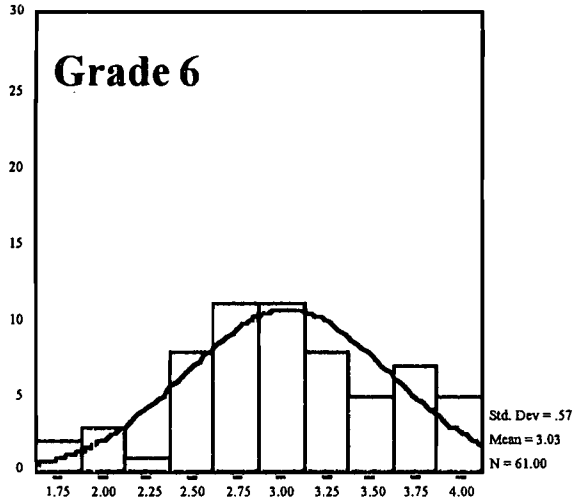


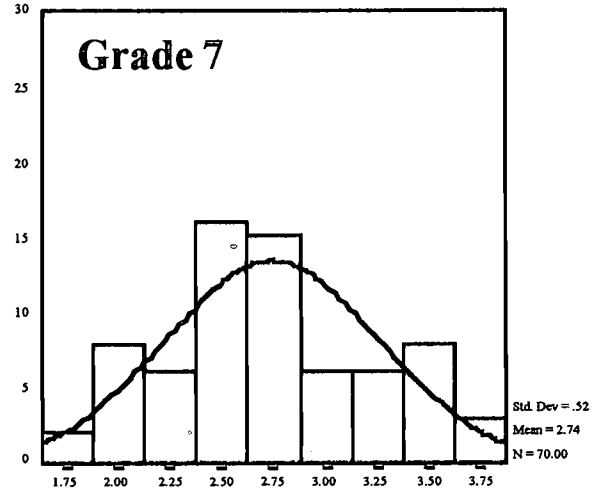


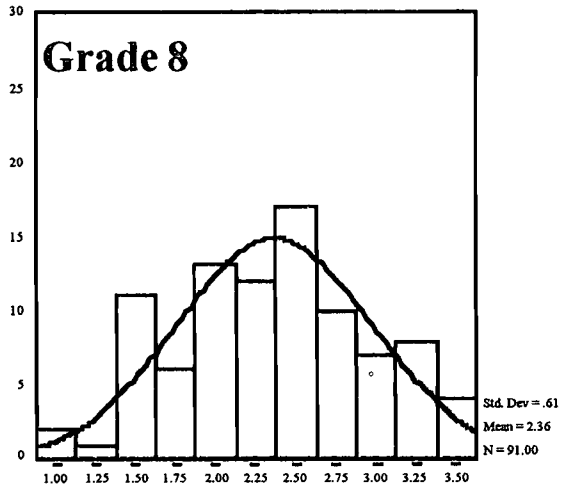


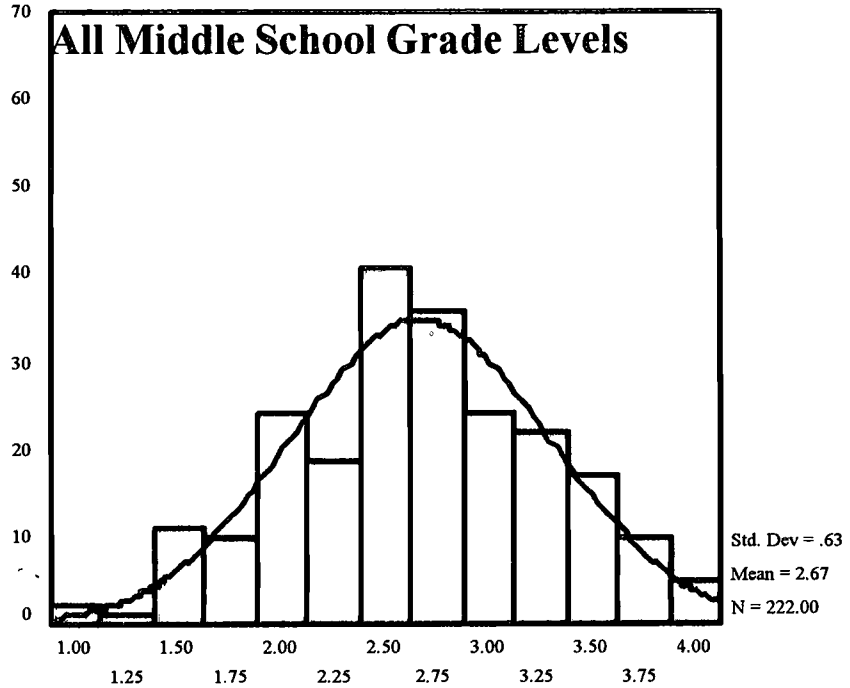


Level 4 Participation - School Governance

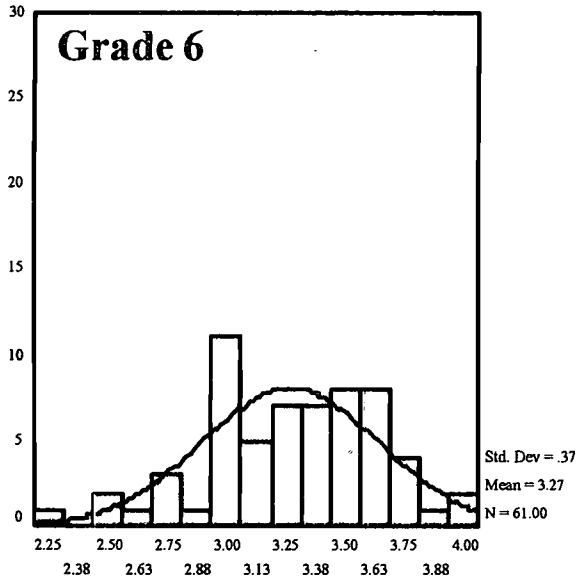


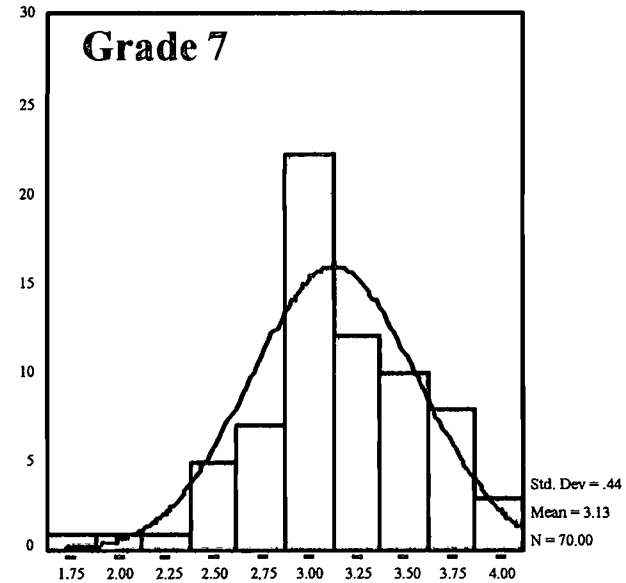


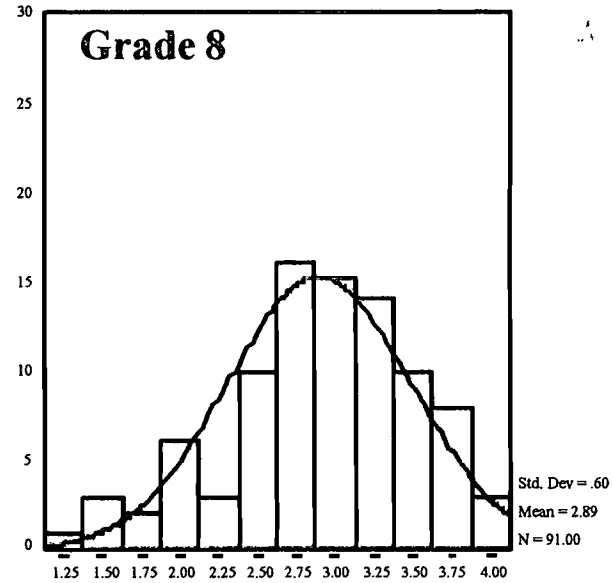


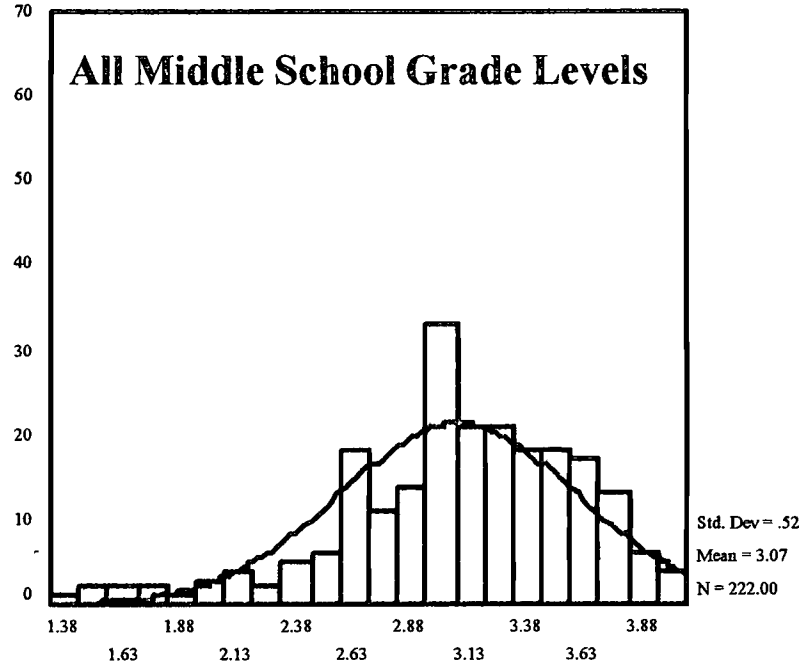


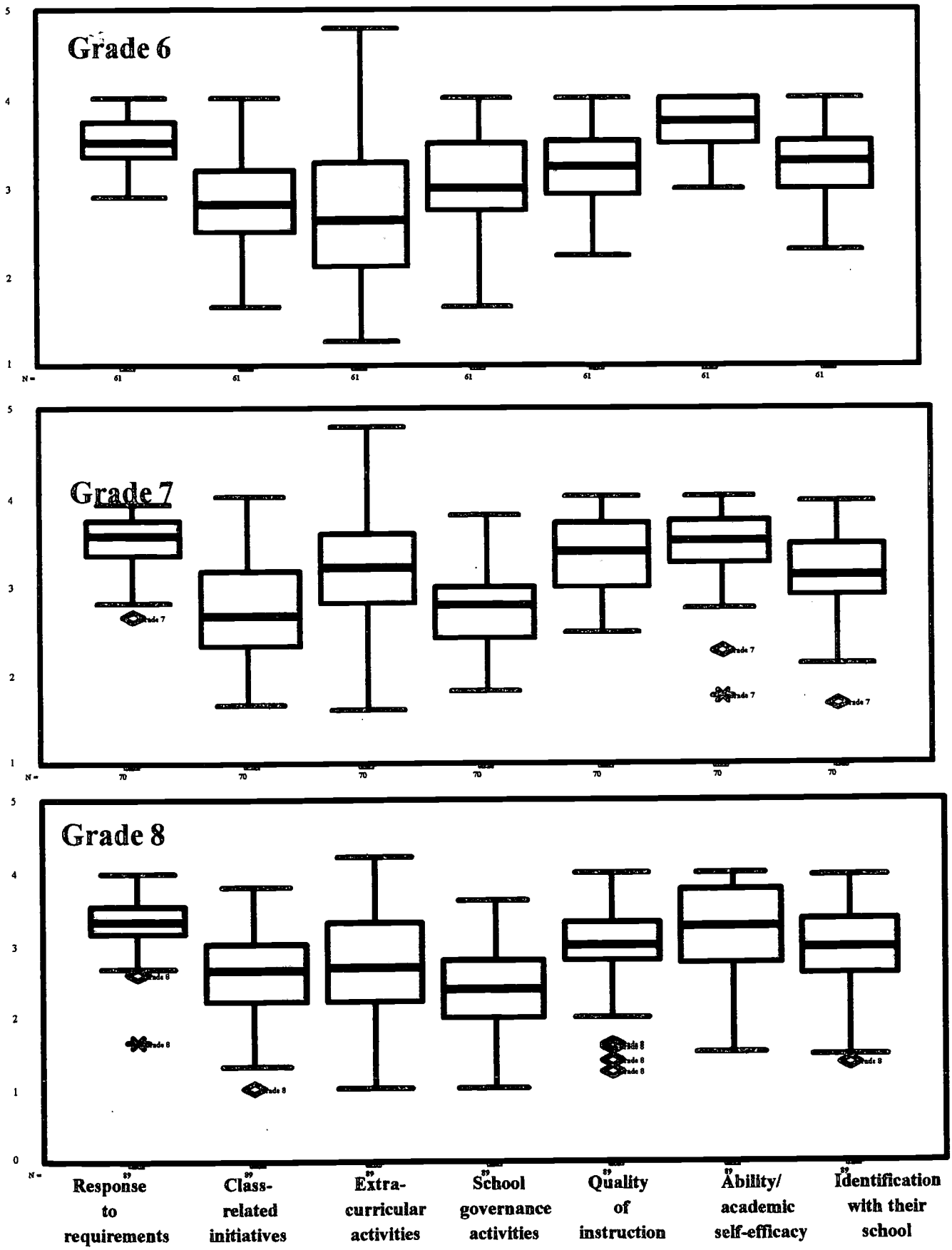
Identification with School










Grade 6
Grade 7
Grade 8
N =
61
70
Response to requirements
Class-related initiatives
Extra-curricular activities
School governance activities
Quality of instruction
Ability/ academic self-efficacy
Identification with their school

Appendix D

SPSS® Printout of ANOVA Table and Bonferroni Multiple Comparisons by Grade Level

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Family Educational Culture	Grade 6	61	3.395	.411	.053	3.289	3.500	2.6	4.0
	Grade 7	70	3.125	.467	.056	3.013	3.236	2.0	3.9
	Grade 8	91	2.932	.607	.064	2.805	3.058	1.4	4.0
	Total	222	3.120	.547	.037	3.047	3.192	1.4	4.0
Quality of Instruction	Grade 6	61	3.261	.399	.051	3.159	3.363	2.2	4.0
	Grade 7	70	3.328	.404	.048	3.232	3.425	2.5	4.0
	Grade 8	91	2.995	.557	.058	2.879	3.111	1.2	4.0
	Total	222	3.173	.493	.033	3.108	3.238	1.2	4.0
Ability/Academic Self-Efficacy	Grade 6	61	3.689	.302	.039	3.611	3.766	3.0	4.0
	Grade 7	70	3.496	.453	.054	3.388	3.605	1.8	4.0
	Grade 8	89	3.213	.599	.064	3.086	3.339	1.5	4.0
	Total	220	3.435	.523	.035	3.365	3.504	1.5	4.0
Response to Requirements	Grade 6	61	3.451	.277	.036	3.380	3.522	2.8	3.9
	Grade 7	70	3.434	.304	.036	3.362	3.507	2.6	3.9
	Grade 8	91	3.316	.351	.037	3.243	3.389	1.8	4.0
	Total	222	3.391	.322	.022	3.348	3.433	1.8	4.0
Class-Related Initiatives	Grade 6	61	2,870	,513	.066	2.739	3.001	1,7	4,0
	Grade 7	70	2,713	,545	.065	2.583	2.843	1,7	4,0
	Grade 8	91	2,649	,575	.060	2.529	2.769	1,0	3,8
	Total	222	2,730	,554	.037	2.657	2.803	1,0	4,0
Extracurricular Activities	Grade 6	61	2.742	.855	.110	2.523	2.961	1.3	4.8
	Grade 7	70	3.230	.656	.078	3.074	3.386	1.6	4.8
	Grade 8	91	2.733	.775	.081	2.572	2.894	1.0	4.2
	Total	222	2.892	.794	.053	2.787	2.997	1.0	4.8
School Governance	Grade 6	61	3.035	.571	.073	2.888	3.181	1.7	4.0
	Grade 7	70	2.740	.519	.062	2.616	2.864	1.8	3.8
	Grade 8	91	2.363	.610	.064	2.236	2.490	1.0	3.6
	Total	222	2.666	.633	.043	2.583	2.750	1.0	4.0
Identification with School	Grade 6	61	3.268	.374	.048	3.172	3.364	2.3	4.0
	Grade 7	70	3.130	.440	.053	3.025	3.235	1.6	3.9
	Grade 8	91	2.895	.597	.063	2.770	3.019	1.4	3.9
	Total	222	3.072	.518	.035	3.003	3.140	1.4	4.0

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std.	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Family Educational Culture	222	2.6	1.4	4.0	3.120	.547	-.589	.163
Ability/Academic Self-Efficacy	220	2.5	1.5	4.0	3.435	.523	-1.123	.164
Quality of Instruction	222	2.8	1.2	4.0	3.173	.493	-.813	.163
Participation - All Levels	222	2.3	1.6	3.9	3.031	.382	-.202	.163
Response to Requirements	222	2.2	1.8	4.0	3.391	.322	-.823	.163
Class-Related Initiatives	222	3,0	1,0	4,0	2,730	,554	-.094	.163
Extracurricular Activities	222	3.8	1.0	4.8	2.892	.794	.047	.163
School Governance	222	3.0	1.0	4.0	2.666	.633	-.077	.163
Identification with School	222	2.6	1.4	4.0	3.072	.518	-.790	.163
Valid N (listwise)	220							

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Family Educational Culture	Between Groups	7.820	2	3.910	14.683	.000
	Within Groups	58.315	219	.266		
	Total	66.135	221			
Quality of Instruction	Between Groups	5.054	2	2.527	11.349	.000
	Within Groups	48.763	219	.223		
	Total	53.817	221			
Ability/Academic Self-Efficacy	Between Groups	8.589	2	4.295	18.192	.000
	Within Groups	51.227	217	.236		
	Total	59.816	219			
Response to Requirements	Between Groups	.863	2	.431	4.282	.015
	Within Groups	22.061	219	.101		
	Total	22.923	221			
Class-Related Initiatives	Between Groups	1.813	2	.907	3.006	.052
	Within Groups	66.055	219	.302		
	Total	67.868	221			
Extracurricular Activities	Between Groups	11.669	2	5.835	10.010	.000
	Within Groups	127.649	219	.583		
	Total	139.318	221			
School Governance	Between Groups	17.030	2	8.515	26.039	.000
	Within Groups	71.616	219	.327		
	Total	88.646	221			
Identification with School	Between Groups	5.443	2	2.722	11.074	.000
	Within Groups	53.826	219	.246		
	Total	59.270	221			

Post Hoc Tests

Multiple Comparisons

Bonferroni

Dependent Variable	(I) Grade	(J) Grade	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Family Educational Culture	Grade 6	Grade 7	.270*	.090	.009	.052	.488
		Grade 8	.463*	.085	.000	.257	.669
	Grade 7	Grade 6	-.270*	.090	.009	-.488	-.052
		Grade 8	.193	.082	.059	-.005	.391
	Grade 8	Grade 6	-.463*	.085	.000	-.669	-.257
		Grade 7	-.193	.082	.059	-.391	.005
Quality of Instruction	Grade 6	Grade 7	-.067	.083	1.000	-.267	.132
		Grade 8	.266*	.078	.002	.078	.455
	Grade 7	Grade 6	.067	.083	1.000	-.132	.267
		Grade 8	.334*	.075	.000	.153	.515
	Grade 8	Grade 6	-.266*	.078	.002	-.455	-.078
		Grade 7	-.334*	.075	.000	-.515	-.153
Ability/Academic Self-Efficacy	Grade 6	Grade 7	.192	.085	.075	-.013	.397
		Grade 8	.476*	.081	.000	.281	.671

Multiple Comparisons

Bonferroni

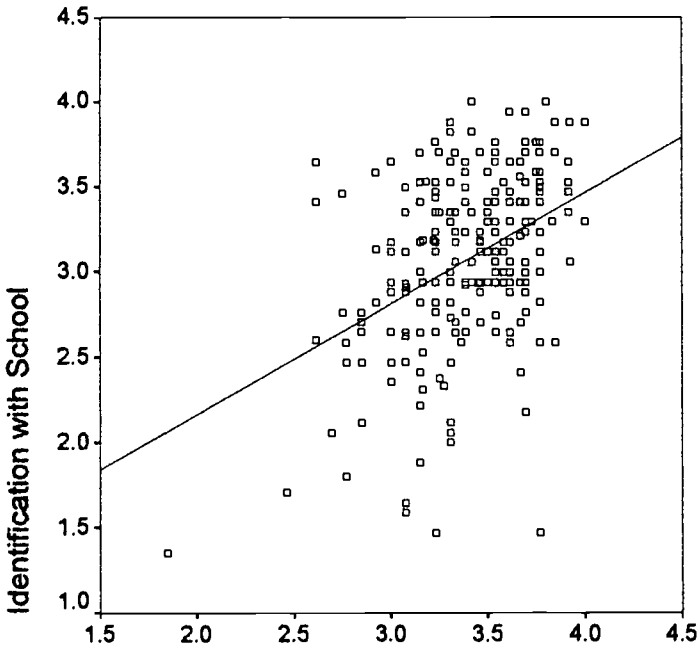
Dependent Variable	(I) Grade	(J) Grade	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Ability/Academic Self-Efficacy	Grade 7	Grade 6	-.192	.085	.075	-.397	.013
		Grade 8	.284*	.078	.001	.097	.471
	Grade 8	Grade 6	-.476*	.081	.000	-.671	-.281
		Grade 7	-.284*	.078	.001	-.471	-.097
Response to Requirements	Grade 6	Grade 7	.017	.056	1.000	-.117	.151
		Grade 8	.135*	.053	.032	.008	.262
	Grade 7	Grade 6	-.017	.056	1.000	-.151	.117
		Grade 8	.118	.050	.060	-.004	.240
	Grade 8	Grade 6	-.135*	.053	.032	-.262	-.008
		Grade 7	-.118	.050	.060	-.240	.004
Class-Related Initiatives	Grade 6	Grade 7	.157	.096	.313	-.075	.389
		Grade 8	.221*	.091	.047	.002	.440
	Grade 7	Grade 6	-.157	.096	.313	-.389	.075
		Grade 8	.064	.087	1.000	-.146	.275
	Grade 8	Grade 6	-.221*	.091	.047	-.440	-.002
		Grade 7	-.064	.087	1.000	-.275	.146
Extracurricular Activities	Grade 6	Grade 7	-.488*	.134	.001	-.810	-.165
		Grade 8	.009	.126	1.000	-.296	.314
	Grade 7	Grade 6	.488*	.134	.001	.165	.810
		Grade 8	.497*	.121	.000	.204	.790
	Grade 8	Grade 6	-.009	.126	1.000	-.314	.296
		Grade 7	-.497*	.121	.000	-.790	-.204
School Governance	Grade 6	Grade 7	.295*	.100	.011	.053	.536
		Grade 8	.672*	.095	.000	.443	.900
	Grade 7	Grade 6	-.295*	.100	.011	-.536	-.053
		Grade 8	.377*	.091	.000	.158	.596
	Grade 8	Grade 6	-.672*	.095	.000	-.900	-.443
		Grade 7	-.377*	.091	.000	-.596	-.158
Identification with School	Grade 6	Grade 7	.138	.087	.341	-.072	.347
		Grade 8	.373*	.082	.000	.175	.571
	Grade 7	Grade 6	-.138	.087	.341	-.347	.072
		Grade 8	.235*	.079	.009	.045	.426
	Grade 8	Grade 6	-.373*	.082	.000	-.571	-.175
		Grade 7	-.235*	.079	.009	-.426	-.045

*. The mean difference is significant at the .05 level.

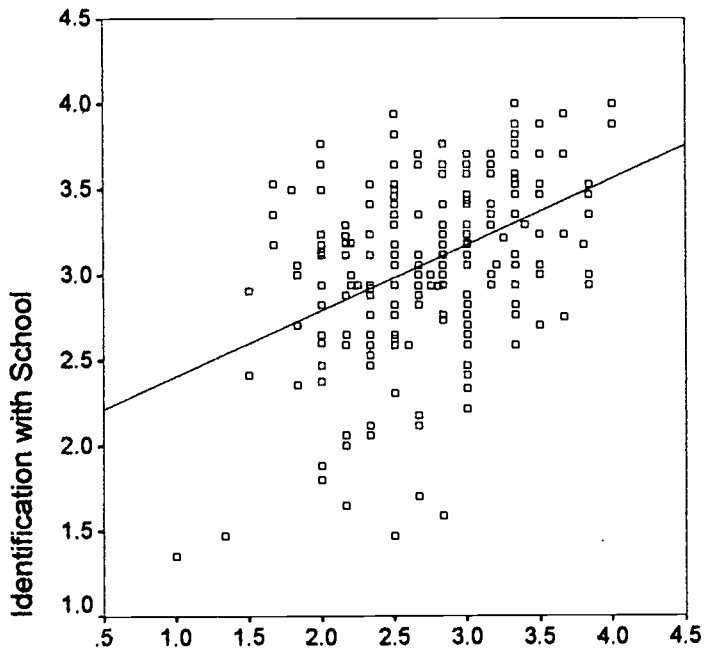
Appendix E

SPSS® Printout of Scatter Plots

Relationships - ID with School and Level of Participation



Rsq = 0.1640



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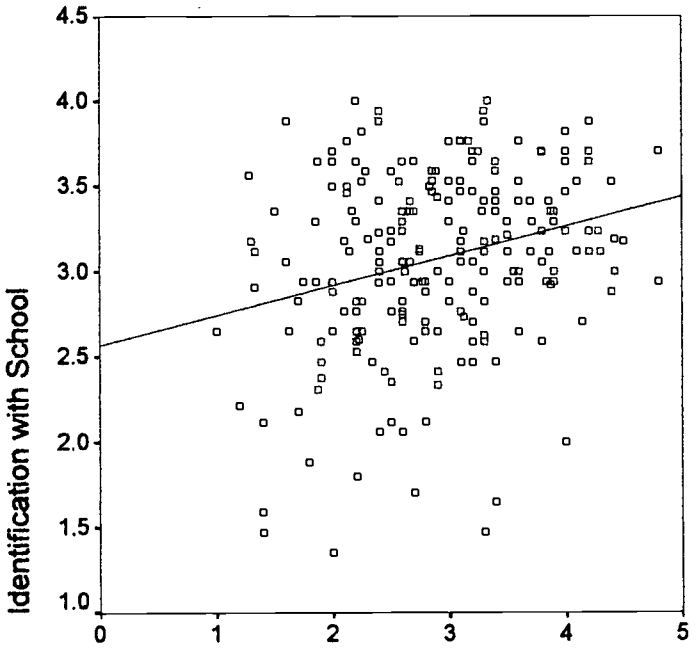
Relationships - ID with School and Level of Participation



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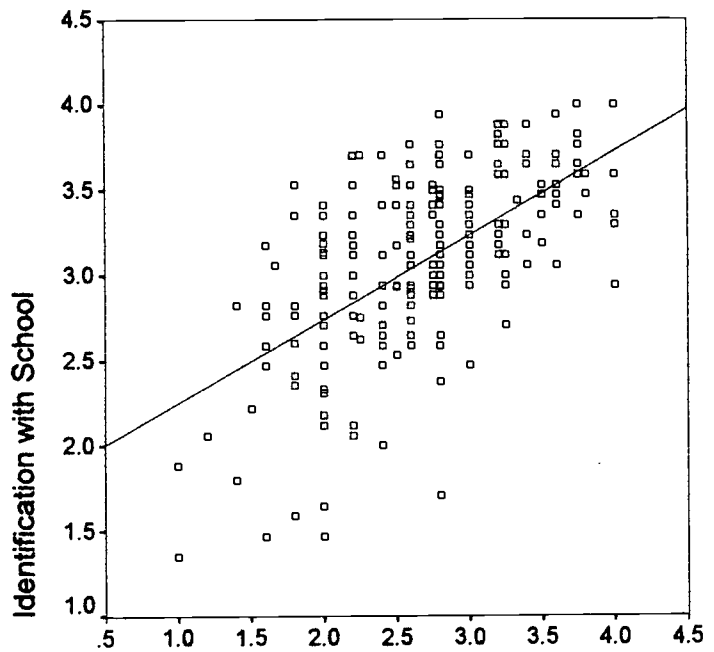
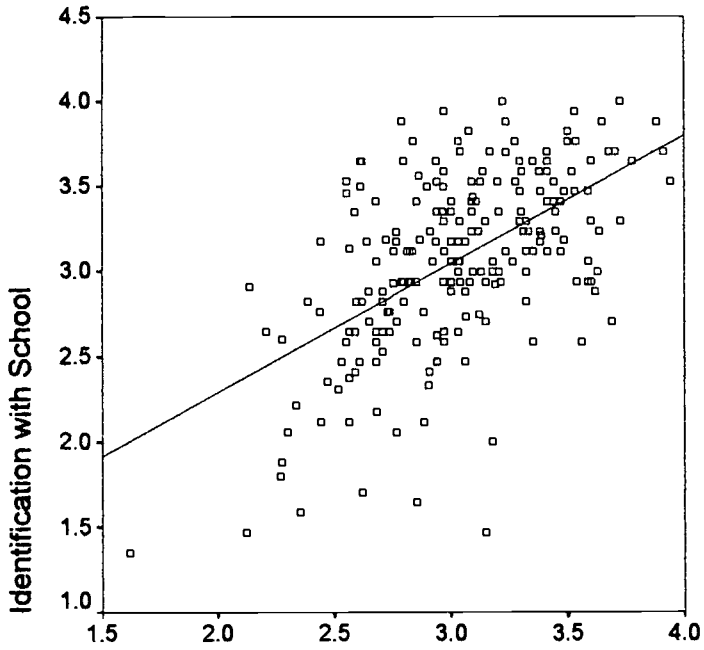


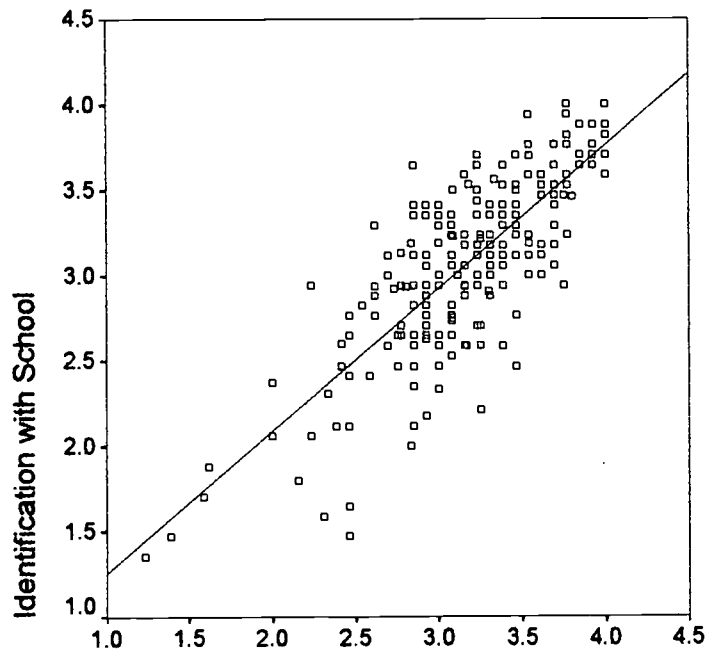
Rsq = 0.3621

Relationship - ID with School and All Levels of Participation



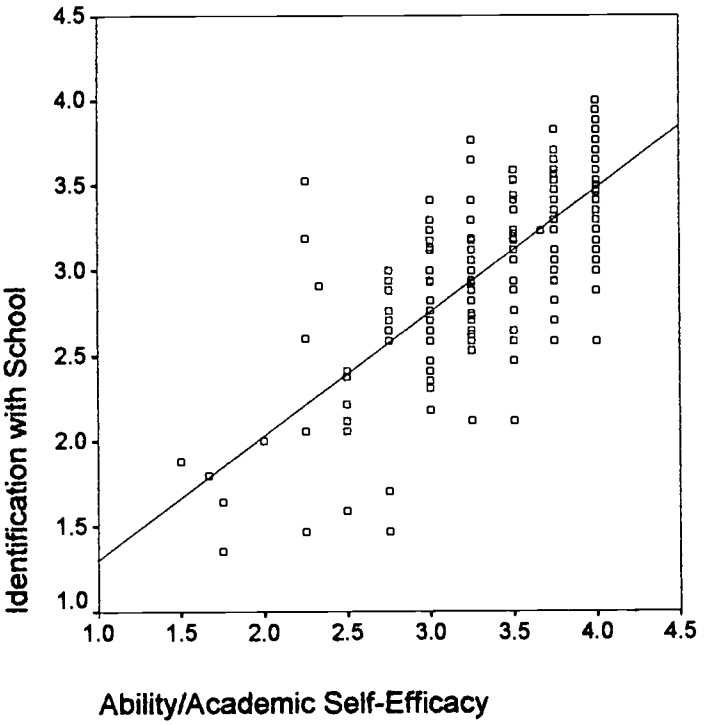
Rsq = 0.3096

Relationship - ID with School and Quality of Instruction



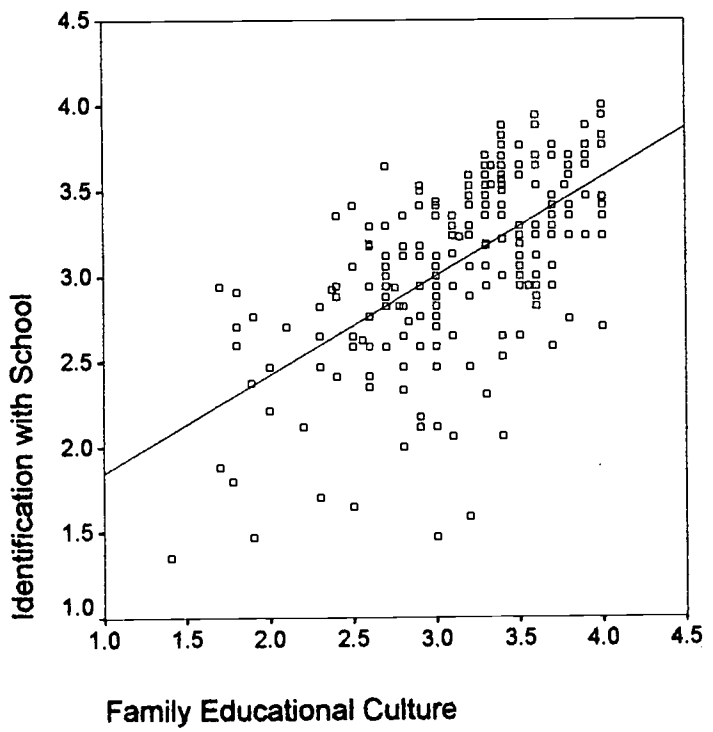
Rsq = 0.6351

Relationship - ID with School and Ability/Academic Self-Eficacy



Rsq = 0.5418

Relationship - ID with School and Family Educational Culture



Rsq = 0.3730

Appendix F

SPSS® Printout of Regression Diagnostics

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Identification with School	3.072	.516	220
Family Educational Culture	3.120	.549	220
Quality of Instruction	3.172	.495	220
Ability/Academic Self-Efficacy	3.435	.523	220
Response to Requirements	3.392	.323	220
Class-Related Initiatives	2,726	,555	220
Extracurricular Activities	2.888	.795	220
School Governance	2.672	.634	220

Correlations

		Identification with School	Family Educational Culture	Quality of Instruction	Ability/Academic Self-Efficacy
Pearson Correlation	Identification with School	1.000	.610	.798	.736
	Family Educational Culture	.610	1.000	.589	.633
	Quality of Instruction	.798	.589	1.000	.675
	Ability/Academic Self-Efficacy	.736	.633	.675	1.000
	Response to Requirements	.410	.430	.414	.423
	Class-Related Initiatives	.414	.546	.467	.449
	Extracurricular Activities	.265	.276	.263	.177
	School Governance	.606	.527	.564	.568
Sig. (1-tailed)	Identification with School	.	.000	.000	.000
	Family Educational Culture	.000	.	.000	.000
	Quality of Instruction	.000	.000	.	.000
	Ability/Academic Self-Efficacy	.000	.000	.000	.
	Response to Requirements	.000	.000	.000	.000
	Class-Related Initiatives	.000	.000	.000	.000
	Extracurricular Activities	.000	.000	.000	.004
	School Governance	.000	.000	.000	.000
N	Identification with School	220	220	220	220
	Family Educational Culture	220	220	220	220
	Quality of Instruction	220	220	220	220
	Ability/Academic Self-Efficacy	220	220	220	220
	Response to Requirements	220	220	220	220
	Class-Related Initiatives	220	220	220	220
	Extracurricular Activities	220	220	220	220
	School Governance	220	220	220	220

Correlations

		Response to Requirements	Class-Related Initiatives	Extracurricular Activities	School Governance
Pearson Correlation	Identification with School	.410	.414	.265	.606
	Family Educational Culture	.430	.546	.276	.527
	Quality of Instruction	.414	.467	.263	.564
	Ability/Academic Self-Efficacy	.423	.449	.177	.568
	Response to Requirements	1.000	.414	.198	.453
	Class-Related Initiatives	.414	1.000	.290	.437
	Extracurricular Activities	.198	.290	1.000	.234
	School Governance	.453	.437	.234	1.000
Sig. (1-tailed)	Identification with School	.000	.000	.000	.000
	Family Educational Culture	.000	.000	.000	.000
	Quality of Instruction	.000	.000	.000	.000
	Ability/Academic Self-Efficacy	.000	.000	.004	.000
	Response to Requirements	.	.000	.002	.000
	Class-Related Initiatives	.000	.	.000	.000
	Extracurricular Activities	.002	.000	.	.000
	School Governance	.000	.000	.000	.
N	Identification with School	220	220	220	220
	Family Educational Culture	220	220	220	220
	Quality of Instruction	220	220	220	220
	Ability/Academic Self-Efficacy	220	220	220	220
	Response to Requirements	220	220	220	220
	Class-Related Initiatives	220	220	220	220
	Extracurricular Activities	220	220	220	220
	School Governance	220	220	220	220

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Quality of Instruction	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Ability/Academic Self-Efficacy	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	School Governance	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Identification with School

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798[a]	.637	.635	.312
2	.842[b]	.708	.706	.280
3	.849[c]	.721	.717	.275

Model Summary[d]

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.637	382.491	1	218	.000
2	.071	53.098	1	217	.000
3	.013	9.706	1	216	.002

a. Predictors: (Constant), Quality of Instruction

b. Predictors: (Constant), Quality of Instruction, Ability/Academic Self-Efficacy

c. Predictors: (Constant), Quality of Instruction, Ability/Academic Self-Efficacy, School Governance

d. Dependent Variable: Identification with School

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.154	1	37.154	382.491	.000[a]
	Residual	21.176	218	9.714E-02		
	Total	58.330	219			
2	Regression	41.317	2	20.658	263.499	.000[b]
	Residual	17.013	217	7.840E-02		
	Total	58.330	219			
3	Regression	42.049	3	14.016	185.949	.000[c]
	Residual	16.281	216	7.538E-02		
	Total	58.330	219			

a. Predictors: (Constant), Quality of Instruction

b. Predictors: (Constant), Quality of Instruction, Ability/Academic Self-Efficacy

c. Predictors: (Constant), Quality of Instruction, Ability/Academic Self-Efficacy, School Governance

d. Dependent Variable: Identification with School

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.432	.137		3.165	.002
	Quality of Instruction	.832	.043	.798	19.557	.000
2	(Constant)	1.288E-02	.136		.095	.924
	Quality of Instruction	.577	.052	.553	11.132	.000
	Ability/Academic Self-Efficacy	.358	.049	.362	7.287	.000
3	(Constant)	2.564E-02	.133		.193	.847
	Quality of Instruction	.528	.053	.506	9.914	.000
	Ability/Academic Self-Efficacy	.309	.051	.313	6.113	.000
	School Governance	.116	.037	.143	3.116	.002

Coefficients[a]

Model		95% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	.163	.702			
	Quality of Instruction	.748	.916	.798	.798	.798
2	(Constant)	-.254	.280			
	Quality of Instruction	.475	.679	.798	.603	.408
	Ability/Academic Self-Efficacy	.261	.455	.736	.443	.267
3	(Constant)	-.236	.288			
	Quality of Instruction	.423	.633	.798	.559	.356
	Ability/Academic Self-Efficacy	.210	.409	.736	.384	.220
	School Governance	.043	.190	.606	.207	.112

a. Dependent Variable: Identification with School

Excluded Variables[d]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Family Educational Culture	.214[a]	4.422	.000	.288	.653
	Ability/Academic Self-Efficacy	.362[a]	7.287	.000	.443	.544
	Response to Requirements	.097[a]	2.183	.030	.147	.829
	Class-Related Initiatives	.053[a]	1.139	.256	.077	.782
	Extracurricular Activities	.059[a]	1.390	.166	.094	.931
	School Governance	.229[a]	4.859	.000	.313	.682
2	Family Educational Culture	.099[b]	2.021	.045	.136	.551
	Response to Requirements	.036[b]	.867	.387	.059	.791
	Class-Related Initiatives	-.010[b]	-.228	.820	-.016	.749
	Extracurricular Activities	.059[b]	1.560	.120	.106	.931
	School Governance	.143[b]	3.116	.002	.207	.617
3	Family Educational Culture	.072[c]	1.469	.143	.100	.530
	Response to Requirements	.005[c]	.129	.897	.009	.744
	Class-Related Initiatives	-.035[c]	-.830	.407	-.057	.723
	Extracurricular Activities	.047[c]	1.244	.215	.085	.919

a. Predictors in the Model: (Constant), Quality of Instruction

b. Predictors in the Model: (Constant), Quality of Instruction, Ability/Academic Self-Efficacy

c. Predictors in the Model: (Constant), Quality of Instruction, Ability/Academic Self-Efficacy, School Governance

d. Dependent Variable: Identification with School

Casewise Diagnostics[a]

Case Number	Std. Residual	Identification with School	Predicted Value	Residual
180	-3.412	1.5	2.407	-.937

a. Dependent Variable: Identification with School

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.332	3.838	3.072	.438	220
Residual	-.937	.739	.000	.273	220
Std. Predicted Value	-3.970	1.748	.000	1.000	220
Std. Residual	-3.412	2.690	.000	.993	220

a. Dependent Variable: Identification with School

Casewise Diagnostics[a]

Case Number	Std. Residual	Identification with School
180	-3.412	1.5

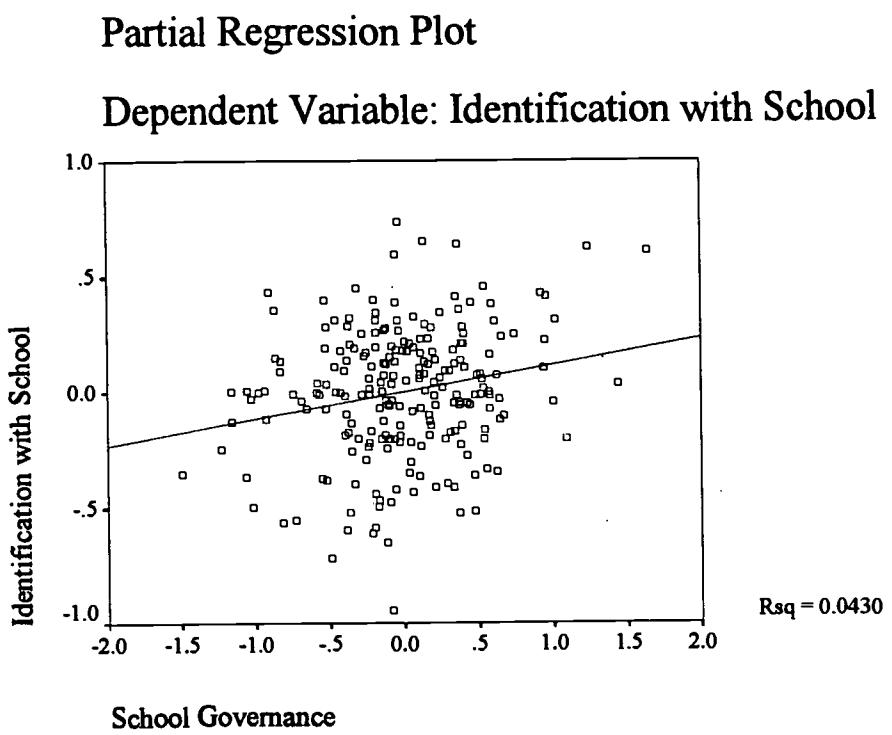
a. Dependent Variable: Identification with School

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1,332	3,838	3,072	,438	220
Std. Predicted Value	-3,970	1,748	,000	1,000	220
Standard Error of Predicted Value	,019	,089	,035	,012	220
Adjusted Predicted Value	1,331	3,833	3,072	,438	220
Residual	-,937	,739	,000	,273	220
Std. Residual	-3,412	2,690	,000	,993	220
Stud. Residual	-3,438	2,737	,000	1,003	220
Deleted Residual	-,951	,765	,000	,278	220
Stud. Deleted Residual	-3,528	2,779	,000	1,009	220
Mahal. Distance	,076	22,124	2,986	3,193	220
Cook's Distance	,000	,102	,005	,011	220
Centered Leverage Value	,000	,101	,014	,015	220

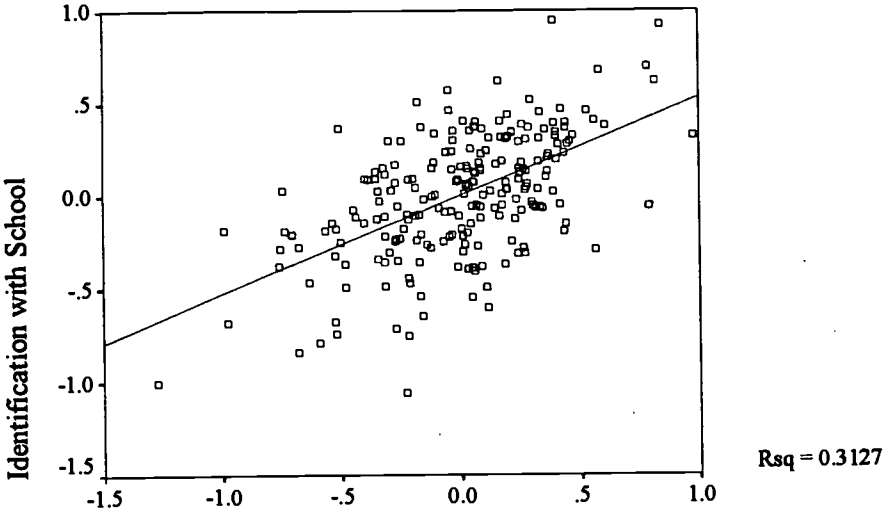
a. Dependent Variable: Identification with School

Charts



Partial Regression Plot

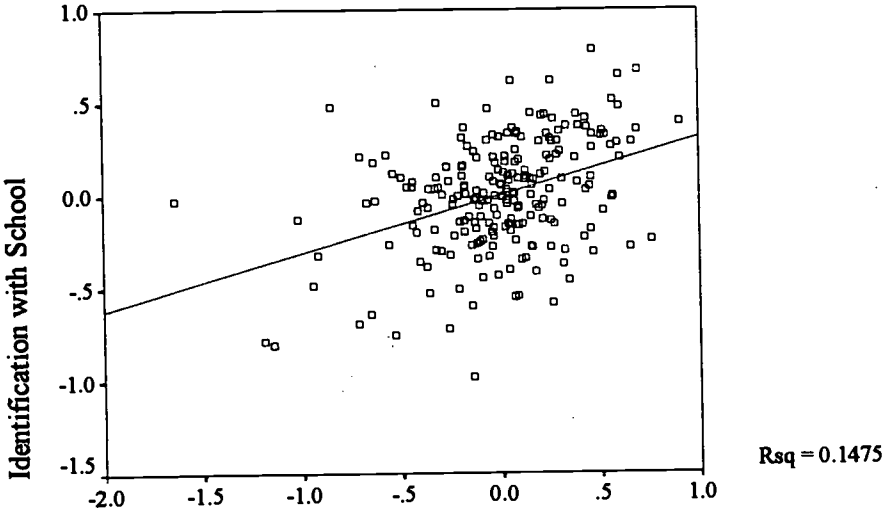
Dependent Variable: Identification with School



Rsq = 0.3127

Partial Regression Plot

Dependent Variable: Identification with School



Rsq = 0.1475

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